

STATE WATER PROGRAM



W.W.I.R.P.P. - SERIES No. 2

SNOHOMISH RIVER BASIN
INSTREAM RESOURCES PROTECTION PROGRAM
INCLUDING
PROPOSED ADMINISTRATIVE RULES, AND
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
(WATER RESOURCE INVENTORY AREA 7)

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

August 1979

SNOHOMISH RIVER BASIN
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INCLUDING
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SUMMARY

The Western Washington Instream Resources Protection Program involves development of instream flow regulations under Chapter 90.54 (Water Resources Act of 1971), Chapter 90.22 RCW (Minimum Water Flows and Levels) and Chapter 173-500 WAC for the 26 Water Resource Inventory Areas (WRIA) found on the western slope of the Cascade Range. The Department of Ecology has undertaken an analysis of the water resources of the Snohomish River Basin and developed policies and procedures to protect flow levels and minimize impacts resulting from future water appropriations. This regulatory action is part of the larger joint federal, state, and local Snohomish River Basin Resource Management Program. The focus of that federal Level B study is the Mediated Agreement, elements of which will be affected by the establishment of instream flows.

Low stream flow conditions occur throughout the Snohomish River Basin during certain periods in the year. Normally, these occur in late summer and early fall. Because of the lack of water in stream courses, migratory and resident fish are impacted and wildlife habitat is diminished. Aesthetic and scenic views are deteriorated during low flow periods. In order to preserve these instream resources, the Department of Ecology has herein proposed instream flow levels for streams in the Snohomish River Basin. All streams, regardless of size, come under the control of flow regulations, unless specifically excluded.

Instream flow requirements may be placed on all future water rights that might affect instream resource values. Diversions will only be permitted so long as base flows or levels, measured at a downstream control station, can be met. Pending notification, permit holders would be required to cease diversions over the course of the normal low flow period. Instream flow requirements may be applied to major water resource development projects, as well as certain individual water rights. Individual in-house domestic supply is exempt from the maintenance of instream flows.

In taking this regulatory action, the Department of Ecology will hold formal hearings on the proposed regulation. Included in the process will be the official adoption of previous administrative acts, which closed some streams from future appropriations and placed low flow restrictions on certain others. IN NO CASE WILL EXISTING WATER RIGHTS BE AFFECTED.

The Instream Resource Protection Program is based on a Department of Ecology methodology for determining flows. This hydrologically based procedure provides varying degrees of protection levels for streams from historical stream flow records. Coverage of the regulatory program is extended from 10 primary flow control stations in this basin. Headwater tributaries and other small streams will be observed for indications of water resource depletion and may have individual flow figures derived for a newly established control station.

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I. BACKGROUND

The Instream Resources Protection Program develops and adopts flow regulations for each WRIA pursuant to Chapter 90.54 RCW and Chapter 90.22 RCW. These regulations represent partial basin management programs that would be amended in the future to expand their scope. By establishing instream flows at this time, the possible over allocation of water resources in a stream system can be minimized.

PROGRAM OVERVIEW

An overall program proposal document has been drafted and circulated to the public and governmental agencies. (Copies available from Department of Ecology (DOE), Olympia). The conceptual approach and technical procedures used to determine the flows require a determination of the number of control stations to be located in the stream system. Flow levels will be monitored at control stations. Future water rights are conditioned to low flows measured at specific control stations. Where possible, United States Geological Survey (USGS) gaging stations have been selected as control stations, providing a historical record of streamflow. Where tributaries of a higher order (smaller in size) are too remote from control stations to adequately judge the effects of future water appropriations, provisions have been made to establish new control stations nearer to those streams upon need.

INSTREAM FLOWS

State law provides that perennial streams and rivers shall be retained with base flows necessary to provide for preservation of wildlife, fish, scenic, aesthetic, and other environmental and navigational values. (RCW 90.54.020(3)(a) 1971). The state may also establish minimum water flows or levels for streams, lakes or other public waters for the purposes of protecting fish, game, birds or other wildlife resources, or recreational or aesthetic values (RCW 90.22.010). These are flows that can be expected in the stream a relatively high percentage of the time. Each stream selected for regulation is rated by the departments of Ecology, Fish, and Game. A high rated stream, having greater environmental and scenic values, will require higher levels of flow protection. The Instream Resources Protection Program does not affect any existing water rights and uses.

PUBLIC PARTICIPATION

All interested individuals, private groups, and public agencies were encouraged to comment on any aspect of the recommended measures for streams in the Snohomish River Basin. A public draft of an environmental impact statement covering the overall program (available May 1, 1979) initiated public involvement activities under the Western Washington Instream Resource Protection Program. A draft program proposal document, describing objectives and technical procedures, was made available at a similar time. The review and comment period for both publications terminated on June 15, 1979. Distribution of the draft basin brochure initiated public involvement in the Snohomish River Basin. Public comments were accepted up to the scheduled hearings

held in Snohomish and King counties during the third full week of July 1979. Written comments and oral testimony taken at public hearings were incorporated in the proposed regulation. Formal adoption took place at an administrative hearing at DOE headquarters in Olympia, on September 5, 1979.

II. BASIN DESCRIPTION

The Snohomish River Basin is located north and east of the Seattle metropolitan area. The basin area is 1,978 square miles, 82 percent of which is covered in forests, with most of the remaining land in agricultural and residential use. Topography is generally lowlands and foothills in the western portion of the basin, whereas mountainous terrain predominates in the central and eastern areas. Precipitation is primarily dependent on elevation, with the lowlands receiving 30-40 inches a year, compared to over 150 inches in the extreme mountainous areas. Land use activities that affect water resources in the Snohomish River Basin include mining, agriculture, forest products, manufacturing, and commercial and urban development. The population of the basin was 137,592 in 1975 and is forecast to increase to 230,881 by the year 2000.

WATER RESOURCES

The Snohomish River divides into two major tributaries, the Skykomish and Snoqualmie, approximately 20 miles upstream from its mouth. Other major tributaries to this system include the Pilchuck on the Snohomish, the Tolt, and the North, South, and Middle Forks of the Snoqualmie, the Sultan, and North and South Forks of the Skykomish.

The Skykomish, the largest tributary, has a drainage of 844 square miles, while the Snoqualmie River drains 693 square miles. The average annual runoff is 7,090,000 acre-feet, third largest in Western Washington.

The average daily discharge of the Snohomish River near Monroe, Washington was 10,150 cfs for 14 years of record. (USGS gage 12.1508). Extreme discharges for the period were a maximum of 115,000 cfs (December 4, 1975) and a minimum of 1,140 cfs (September 29, 1967, September 17, 1973). The average daily discharge for the Skykomish River near Gold Bar, Washington was 3,990 cfs for 49 years of record. (USGS gage 12.1345) Extreme discharges for the period were a maximum of 88,700 cfs (December 21, 1933) and a minimum of 315 cfs (November 29, 1952). The average daily discharge for the Snoqualmie River near Carnation, Washington was 3,814 cfs for 49 years of record. (USGS gage 12.1490) Extreme discharges for the period were a maximum of 59,500 cfs (February 27, 1932) and a minimum discharge of 239 cfs (August 21, 1945).

Runoff patterns for the Skykomish and Snoqualmie drainages indicate a high degree of uniformity in storm coverage over the entire Snohomish River Basin. Much of the recorded runoff is high mountain snowmelt. Consequently, the normal high flow period due to winter rains is followed by snowmelt peak flow in the spring. In general, the spring peak is more pronounced at the higher altitudes whereas the winter peaks become more dominant in lowland areas.

On the average, minimum monthly flows are recorded during August. In many years, however, summer recessions (low flows) continue into the fall, causing the mean September flow to be about as low as that of August. Melt water from a few small permanent ice fields enhances the summer flows of some high altitude tributaries. Ground water contributions to summer flow are not appreciable along the upper reaches of streams in the basin, but becomes increasingly significant in the broad valleys of the Puget Sound lowland.

WATER RESOURCE UTILIZATION

Within the Snohomish Basin a system of dams and diversions has been developed on the Sultan River watershed and the South Fork Tolt River. Both systems are managed primarily for water supply purposes.

The City of Everett in collaboration with the Snohomish County Public Utility District No. 1 operates the George Culmback Dam on the upper Sultan River. Water released from Spada Lake is diverted into the municipal supply system at up to, 300 cfs from the river. The Snohomish PUD has plans for raising Culmback Dam to generate hydropower. A pipeline from the powerhouse will divert a portion of the water to Lake Chaplin, the municipal and industrial water supply reservoir, and return a portion to the Sultan River to maintain flows in the river.

The City of Seattle diverts up to 140 cfs from its South Fork Tolt River storage reservoir for municipal supply. The reservoir has a capacity of about 58,000 acre-feet.

Other diversions of the Snohomish River occur at Snoqualmie Falls, where Puget Sound Power and Light Co. diverts up to 620 cfs to Plant No. 1 and up to 1900 cfs is diverted to Plant No. 2. Both amounts are returned to the Snoqualmie River. The City of Snohomish diverts 5 cfs from the Pilchuck, 3 cfs of which goes for municipal supply and 2 cfs for power generation. The Weyerhaeuser Co. currently diverts about 100 cfs from the Lower Snohomish for industrial purposes, which is returned as wastewater to tidewater. The Snoqualmie Falls Timber Co. diverts 15 cfs from Tokul Creek for manufacturing purposes and supplies the community of Snoqualmie Falls with domestic water. The fish hatchery on May Creek and fishway at Sunset Falls divert up to 190 cfs from tributaries to the Skykomish River, which are nonconsumptive water uses. Irrigation water is diverted from the lower parts of the Skykomish, Snoqualmie, and Snohomish River basins.

INSTREAM RESOURCES

Instream resource protection through establishment of flow requirements or levels is to benefit wildlife, fish, scenic, navigational and other environmental values. In addition, these flows will assure the maintenance of water quality standards provided appropriate treatment measures continue or are implemented. Each stream to be considered in the Snohomish River Basin has been rated by a committee of state agencies concerned with resource management in the basin. Those streams receiving the highest ratings are presumed to be richest in environmental values and receive the highest level of resource protection.

Wildlife Values

By maintaining sufficient water in stream courses during low flow periods, vegetation in the riparian environment will be supported and will continue to provide habitat for wildlife. Instream flows will also provide drinking water for a variety of wildlife species and sport fisheries. Streamflow fluctuations mitigated by base flow regulations will be less damaging to wildlife use patterns and habitat. The large Snohomish River estuary, though drastically reduced by urban and industrial development, provides a tremendous habitat for wildlife. Instream flows will protect those wetlands during low flow periods, by conditioning any further withdrawals.

Fisheries

Four species of salmon (coho, chinook, chum, and pink) provide the Snohomish Basin with valuable anadromous fish runs. The largest runs and highest values are pink, coho, and fall chinook. Natural salmon production in the basin averages 350,000 fish each year, roughly valued at \$2.8 million annually. It is estimated that natural production in the basin could yield over six times the present annual value for salmon.

Winter steelhead is the most popular sport catch in the basin, although historically, summer steelhead was the largest segment. Resident freshwater fish such as cutthroat, rainbow trout, brook trout, bass, crappie, whitefish, and many others provide sport fisheries opportunities throughout the basin. Generally, resident freshwater fish thrive in lakes, ponds, reservoirs, and streams above barriers to salmon and steelhead, because they are vulnerable to competition.

Cumulative, subtle changes in stream habitat can cause reductions in anadromous and resident fish populations. Fish habitat requirements affected by the instream flows or levels are adequate water quality and quantity, suitable gravel for spawning and egg incubation, sufficient food supply, and shelter.

Small streams are particularly vulnerable to impacts of residential development such as sedimentation, obstruction, increased flooding, lowered summer flows, and septic tank failure.

Recreational Values

Although the Snohomish Basin provides tremendous opportunities for a variety of outdoor recreation activities, conflicts and problems have emerged between varying uses. The loss of streamside habitat can have a detrimental effect on recreational uses in the basin. The depletion of water from streams and protracted periods of low flow greatly diminish the recreational value of the Snohomish River Basin. The Instream Resource Protection Program will operate to maintain recreational values in streams. Specific recreational facilities, such as the proposed Delta Lobes and Three Forks Park, will benefit from instream flows or levels. Management plans and policies for state-owned lands on the Skykomish River, in accordance with the State Scenic Rivers Act, will be developed with the assurance that streamflows will not be depleted during the normal low flow period.

Water Quality

Violations of water quality standards have consistently occurred in both the upper and lower Snohomish Basin. Above Gold Bar on the Skykomish and North Bend on the Snoqualmie, violations occur during the seasonal low flow period. Most sources of pollution in the upper reaches are from naturally occurring biological sources. In the lower basin, water quality violations are associated with point discharges of pollution, uncontrolled runoff from urban, suburban and agricultural areas, septic tank effluent, and dredging and spoils disposal operations.

The Instream Resources Protection Program will have a beneficial effect upon water quality in the basin. By retaining water in the streams through flow provisions on future appropriations, the program will assist in attaining 1983 water quality goals of fishable and swimmable waters. Water quality maintenance should be especially beneficial in the upper tributaries where low flow, seasonal conditions are most critical.

WATER RESOURCES PLANNING

The Western Washington Instream Resources Protection Program will affect and, in turn, be affected by resource management programs and water resource development projects in the Snohomish River Basin. The Snohomish River Basin Resource Management Program is concerned with ongoing governmental natural resources planning activities. This "parent" program involves federal, state, and local effort and will recommend actions to resolve complex, long-range problems in the study area. The focus of much of the Snohomish River Basin Resource Management Program is the Mediated Agreement, which is an outline of actions to achieve flood damage reduction while preserving farming, forestry, and other economic and environmental values in the basin.

Elements of the Mediated Agreement are directly related to the Instream Resource Protection Program. Base flow determinations established in this current regulatory action will be considered as one element of the Level B Study under the Snohomish River Basin Resource Management Program. The detailed technical feasibility studies (Level C) on Mediated Agreement elements will receive the input of this action as governing hydrologic conditions. The following project level, feasibility studies in the Snohomish River Basin, will be affected by the establishment of instream levels or flows.

North Fork Snoqualmie Dam (Corps of Engineers) - A single, multiple purpose dam would provide flood control benefits and municipal and industrial water supply. About one-half of the project cost would be allocated to water supply for East Central Puget Sound between Tacoma and Everett in King County. Instream flows for the North Fork Snoqualmie River are established by this regulatory action.

North Fork Tolt River (City of Seattle) - A proposed diversion of municipal water for the City of Seattle is in the preliminary design phase. Preliminary instream

flows have been submitted to the City of Seattle Water Department for incorporation in the project planning and will be adopted through this program.

Sultan Basin Project (Snohomish Co. PUD) - A multiple purpose project will supply future water to the existing City of Everett diversion system and provide power to the Snohomish Co. PUD. Phase II of the project, to raise Culmback Dam, is in the final design step. The departments of Fisheries and Game are negotiating low flow requirements as part of the federal licensing procedures. Prior to formal adoption in this regulation, the Sultan River flow requirements will be reviewed and, if necessary, revised.

III. CURRENT ADMINISTRATIVE STATUS

The Department of Ecology is entrusted with the responsibility of protecting the quality of the natural environment. State of Washington surface water codes authorize the department to manage the waters of the state, declaring beneficial uses and appropriating rights to the waters. Statutory powers allow the department to condition the usage of water through surface water source limitations, minimum flows or levels, and the establishment of base flows.

SURFACE WATER SOURCE LIMITATIONS

STATUTORY POWERS

The Department of Ecology is required to consider placing special restrictions on appropriations from specific streams when such restrictions are recommended by the departments of Fisheries and/or Game (Chapter 75.20 RCW). The purpose of the restrictions is to protect the habitat of fish residing or spawning in the streams.

ADMINISTRATIVE STATUS

Stream closures have resulted from determinations that over allocation of a particular water resource may occur or had occurred. Table 1 and Figure 2 display the surface water source limitations currently in effect in the Snohomish River Basin. The existing surface water source limitations on water rights, closing some streams to further appropriations by administrative action, are proposed for adoption through a hearing process associated with the Western Washington Instream Resource Protection Program.

Table 1 — Current Administrative Status of Streams and Lakes, Snohomish Basin

STREAM	TRIBUTARY TO	ACTION	DATE(S)
Evans Creek	Lake Beecher	Low Flow	6/21/51
Foye Creek	Riley Slough	Low Flow (4.0 cfs)	6/10/75
French Creek	Snohomish River	Low Flow (0.75 cfs)	--
Griffin Creek	Snoqualmie River	Closed	9/22/53
Harris Creek	Snoqualmie River	Closed	1/20/44, etc., 7/10/74
Langlois Creek	Tolt River	Low Flow (3.0 cfs)	--
Little Pilchuck Creek	Pilchuck River	Closed	5/6/52, etc.
May Creek	Wallace River	Closed	10/13/53, 6/2/72
Patterson Creek	Snoqualmie River	Closed	2/19/51, etc.
Quilceda Creek	Ebey Slough	Closed	6/10/46
Raging River	Snoqualmie River	Closed	9/20/51, 1/5/73
Tate Creek	N. Fork Snoqualmie River	Low Flow (2.0 cfs)	9/30/38, etc., 7/23/56
Tulalip Creek	Tulalip Bay	Interim Low Flow (2.5 cfs)	--
Unnamed Stream (Bodell Creek)	Pilchuck River	Closed	9/6/51, 6/26/75
Unnamed Stream (Coon Creek)	Pilchuck River	Low Flow (1.0 cfs) (bypass 1/2 flow)	12/17/51, etc.
Unnamed Stream (Solberg Creek)	Snoqualmie River	Low Flow (2.0 cfs)	4/25/46
Unnamed Stream	Cherry Creek	Low Flow (1.0 cfs)	11/17/55
Unnamed Stream	McCoy Creek	Low Flow	7/14/52
Unnamed Stream	N. Fork Snoqualmie River	Low Flow (3.0 cfs)	--
Unnamed Stream	Snoqualmie River	Low Flow (1.0 cfs)	--
Wood Creek	Snohomish River	Low Flow (0.75 cfs)	2/11/53
Woods Creek	Skykomish River	Low Flow (variable)	4/5/50, etc.
<u>Lake Level Established</u>			
Unnamed Lake	Horseshoe Lake	Outlet Low Flow (1.0 cfs)	12/17/51
<u>Recommended for Closure</u>			
Cherry Creek	Snoqualmie River	--	7/31/79
French Creek	Snohomish River	--	7/31/79
Stossel Creek	Tolt River	--	7/31/79
Tate Creek	N. Fork Snoqualmie River	--	7/31/79
Tokul Creek	Snoqualmie River	--	7/31/79

MINIMUM FLOWS OR LEVELS

In limited instances, minimum flows or levels have been established through a detailed planning program using a habitat-based methodology developed jointly by USGS and the departments of Fisheries and Game.

STATUTORY POWERS

The Department of Ecology shall, when requested by Fisheries or Game, establish minimum flows or levels as required to protect instream values and any fish, game, or wildlife resources (Chapter 90.22 RCW).

ADMINISTRATIVE STATUS

In the Snohomish Basin, minimum flows have been requested on the Snoqualmie River (letter from Fisheries, 1-22-75).

BASE FLOWS

Base flow regulations are prepared under a hydrologically based methodology used by the Department of Ecology. Other state resource protection agencies are asked to comment on the proposed flows or levels, using their own methods for determining adequate levels of protection for instream resources. Mutually agreed upon values are sought through interagency negotiation. Determinations of base flow are made from historical flow records.

STATUTORY POWERS

The Western Washington Instream Resource Protection Program is authorized under Chapter 90.54 RCW (Water Resources Act of 1971) and Chapter 173-500 WAC. The act states ". . . perennial rivers and streams of the state shall be retained with base flows. . ." (RCW 90.54.020).

ADMINISTRATIVE STATUS

In Western Washington, base flows have been established for the Lower and Upper Chehalis (WRIA 22 and 23) under the Chehalis Basin Management Program (Chapter 173-522 WAC). No base flow regulations are currently adopted in the Snohomish River Basin. Flows or levels proposed in this basin program will be formally adopted through an administrative hearing process. No existing water rights will be affected by adoption of the basin program regulations on future appropriations.

IV. DETERMINATION OF INSTREAM FLOWS

The Snohomish Basin Instream Resources Protection program identifies control reaches and stations and determines flows or levels. The recommended program is based on analysis of basin hydrology and surveys of fish production capabilities in the main streams and some smaller tributaries of the Snohomish River Basin.

Within regions of the basin which are in immediate conjunction with selected control sites, out-of-stream water diversions will be regulated by means of streamflow quantities measured at

the control sites. These control reaches are said to be under immediate regulation and will be so codified in the following program. Other areas or streams, falling outside or upstream from a control reach, will not be provided with separate control figures at this time. Regulatory wording automatically alerts administrators where concern for instream resources on small streams ought to be shown. The departments of Fisheries and Game have supplied recommended instream flows for secondary streams in the basin, which are published within this program document. (See Table 4)

CONTROL STATIONS AND REACHES

The Department of Ecology concludes that a network of ten control stations will provide adequate managerial control over future diversions from the Snohomish River. The 10 stations will be periodically monitored during all times of the year and continuously monitored during crucial, low flow periods. Water diversions under water rights that are subject to flow restrictions will cease diverting when specified flow levels are reached. Notification of pending action will be made as far in advance of the actual flow conditions as is possible.

Table 2 and Figure 3 display the regulatory control network for the Snohomish Basin Instream Resources Protection Program.

Table 2.

LIST OF PROPOSED CONTROL LOCATIONS (DOE)

CONTROL LOCATION	GAGE NUMBER	RIVER MILE	STREAM MANAGEMENT REACH
South Fork Skykomish River	12.1330.00	51.6	From conflu. w/No. fork Skykomish to headwaters
Sultan River	12.1381.50	5.1	Mouth to headwaters
Skykomish River	12.1411.00	25.0	Mouth to headwaters excluding So. Fork Skykomish and Sultan R.
North Fork Snoqualmie River	12.1430.00	2.2	Mouth to headwaters
Snoqualmie River	12.1445.00	40.0	Snoqualmie Falls to headwaters excluding No. fork Snoqualmie R.
Tolt River	12.1485.00	8.7	Mouth to headwaters
Snoqualmie River	12.1490.00	23.0	Conflu. w/Harris Cr. to Snoqualmie Falls excluding Tolt River
Snoqualmie River	(pending action)	2.5	Mouth to confl. w/ Harris Creek
Pilchuck River	12.1550.10	5.9	Mouth to headwaters
Snohomish River	12.1508.00	20.4	From influence of mean annual high tide at low base flow levels to conflu. with Skykomish River and Snoqualmie River excluding Pilchuck R.

The system of coverage provides data on streamflows on both the major tributaries of the Snohomish River, with three stations directly on the Snoqualmie River and two on the Skykomish River. The mainstem of the Snohomish River is gaged below the confluence and the Pilchuck River as it enters the Snohomish River at Snohomish, Washington. In addition, three other monitored streams, the Sultan, Tolt, and North Fork Snoqualmie, are included in the network to provide controls over major water resources development projects.



Figure 3. DOE PROPOSED CONTROL STATIONS -- SNOHOMISH RIVER BASIN

STREAM RATING

Instream resources are only partially quantifiable; some aspects of environmental quality are subjective measurements. To differentiate among different stream systems, a rating system was devised to reach a consensus on the relative significance of various streams.

Inherent in the rating process is a comparative definition of levels of instream resource protection. In short, the higher the values for instream resources, the higher the level of provided instream flow protection. A conversion curve has been developed to convert stream ratings to base flow occurrences. From a high stream rating, a high level base flow would be derived.

A stream rating committee was formed of state agencies concerned with stream related activities. Each participant was asked to rate a particular stream or reach, from a low value of one, to a high value of four. Each stream was rated for six categories:

<u>Wildlife</u>	(Values for birds, wild animals, excluding fish)
<u>Fish</u>	(Use values for propagation, rearing, and migration of fish, resident game fish and values of stream for fishing).
<u>Scenic and Aesthetic</u>	(Audible and visual values of natural beauty).
<u>Navigation</u>	(Values for all forms of boating).
<u>Other Environmental Values</u>	(Miscellaneous activities such as recreation, swimming).
<u>Water Quality Standards</u>	(Set by State of Washington Department of Ecology).

Table 3 displays stream ratings and percent flow duration numbers for streams in the Snohomish River Basin.

Table 3.

STREAM RATINGS AND PERCENT FLOW DURATION
STREAM MANAGEMENT UNITS – WRIA 07

CONTROL STATION Stream Name	STREAM RATING						Total Rating	PERCENT FLOW DURATION	
	Wild- life	Fish	Aesth	Navig	Other Envir	Water Qual		Low Flow Period	High Flow Period
So. Fork Skykomish River (Conflu. w/No. Fork Skykomish to headwaters)	2	4	3.7	2.3	2.5	4	16.5	74	95
Sultan River	2	4	3.3	0	2.5	3.5	15.3	77	95
Skykomish R. (mouth to headwaters excl. So. Fork Skykomish & Sultan Rivers)	3	4	3.3	3.3	1.5	3	18.1	71	95
No. Fork Snoqualmie River	4	3.5	3.3	2	1.5	4	18.3	71	95
Snoqualmie River (Snoqualmie Falls to headwaters excl. No. Fork Snoqualmie river)	3.5	3.7	3.0	3.1	2	3.5	18.8	70	95
Tolt river	4	4	3	1.5	1	4	17.5	72	95
Snoqualmie River (Confl. w/Harris Creek to Snoqualmie Falls excl. Tolt River)	4	4	2.3	3	2	3	18.3	71	95
Snoqualmie River (mouth to confl. w/Harris Creek)	3	4	2.3	3	2	3	18.3	71	95
Pilchuck River	3	4	2.3	1	2	3.5	15.8	76	95
Snoqualmie River (mouth to confl. w/Skykomish River & Snoqualmie R., excl. Pilchuck River	4	4	2.3	3.3	2	2.8	18.4	71	95

PERCENT FLOW DURATION

Percent flow duration refers to a specific percent-of-time that a flow level will be exceeded. A complete, year-long flow picture is constructed as a family of hydrographic curves with each individual curve displaying a specific percent-of-time exceedence frequency level. The numbers indicated from Table 3 under "percent flow duration" refer to exceedence curve selected for either low flow or high flow periods.

Low or high flow period is determined by comparing the median daily flow for the entire period of record analysis to the 50 percent-of-time discharge duration curve. High flow periods are those where the 50 percent-of-time hydrograph curve exceeds the median flow and, conversely, low flow periods are identified by the time when the 50 percent curve is below median flow.

Negotiations between the state natural resources agencies reached a consensus that it would be desirable to use different conversion curves for high flow and low flow periods. The 95 percent-of-time flow duration hydrograph serves as a guide for instream flows during all high flow periods, while a variable percent duration, based on stream rating value, is used during low flow periods.

INSTREAM FLOW HYDROGRAPH

From the analysis of low and high flow periods, a controlling instream flow hydrograph is constructed. That curve (plotted on a semi-logarithmic graph) couples the 95 percent exceedence curve (for all high flow periods) to the low flow period exceedence curve (determined from the conversion of stream rating to flow duration). After the curves are smoothed by connecting straight lines, the specific points along each segment of the final instream flow hydrograph can be described by flow value and date. These working figures become the initial basis for regulation and management of water rights. Flow values, derived from hydrographs for 10 control stations, are shown in Figure 4.

For certain streams, which are proposed to be developed with major projects, a secondary set of flows have been provided, to apply to dry-year conditions. These critical year flows are a level of security which cannot be violated, except under unusually harsh conditions.

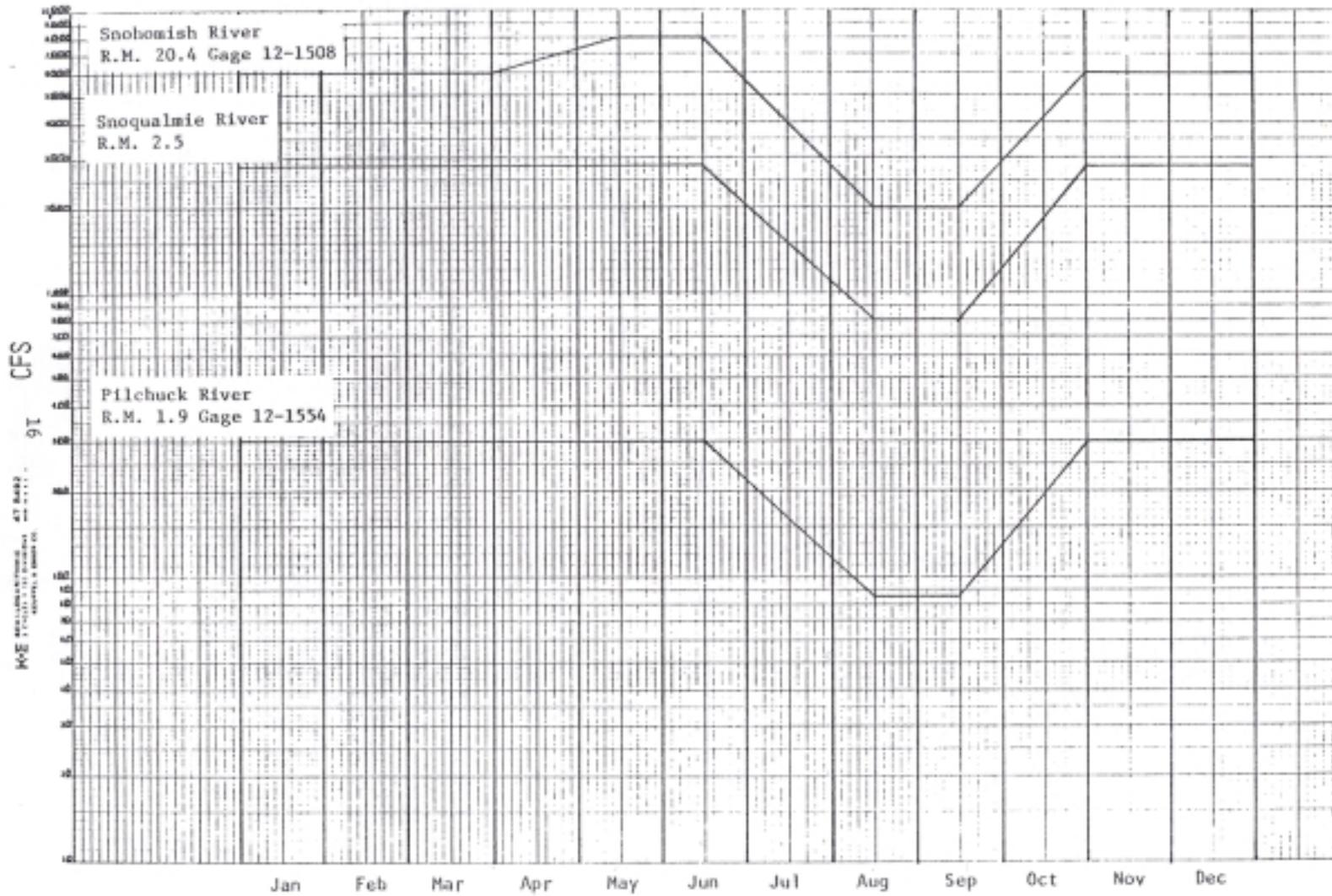
V. MANAGEMENT OF INSTREAM FLOWS

The Western Washington Instream Resources Protection Program will complicate the activities of water use regulation. By establishing instream flow requirements, the Department of Ecology is assuming an added burden of implementing new standard operating procedures. The flow figures found in the accompanying regulation will be operative for the stream management units cited in the regulations (see Appendix A). Streams and tributaries not provided with specific flow figures for regulation by direct reference to control stations will be administered by the advice of state resource management personnel.

Figure 4.

SNOHOMISH BASIN INSTREAM FLOW HYDROGRAPHS

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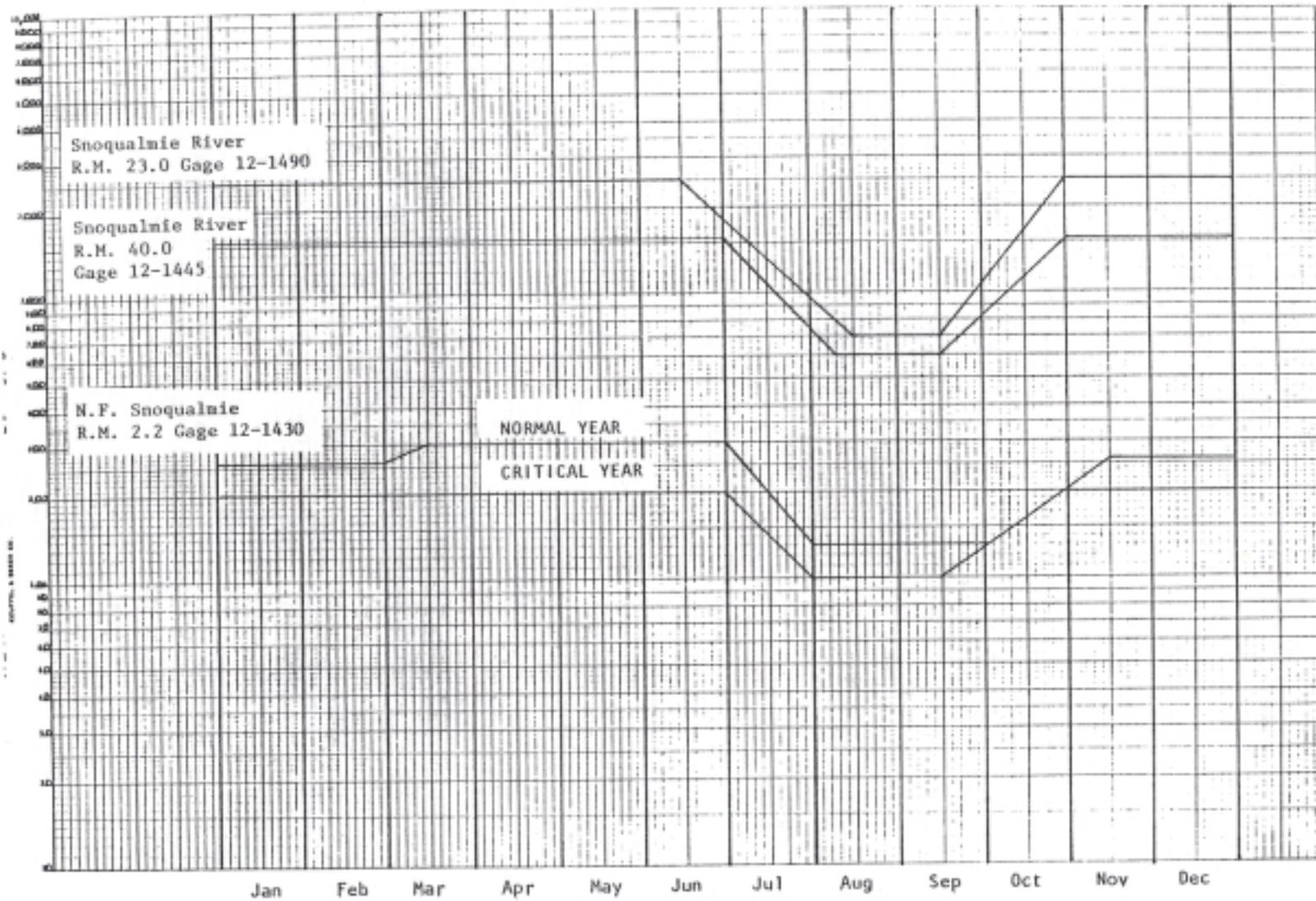


Figure 4. (continued)

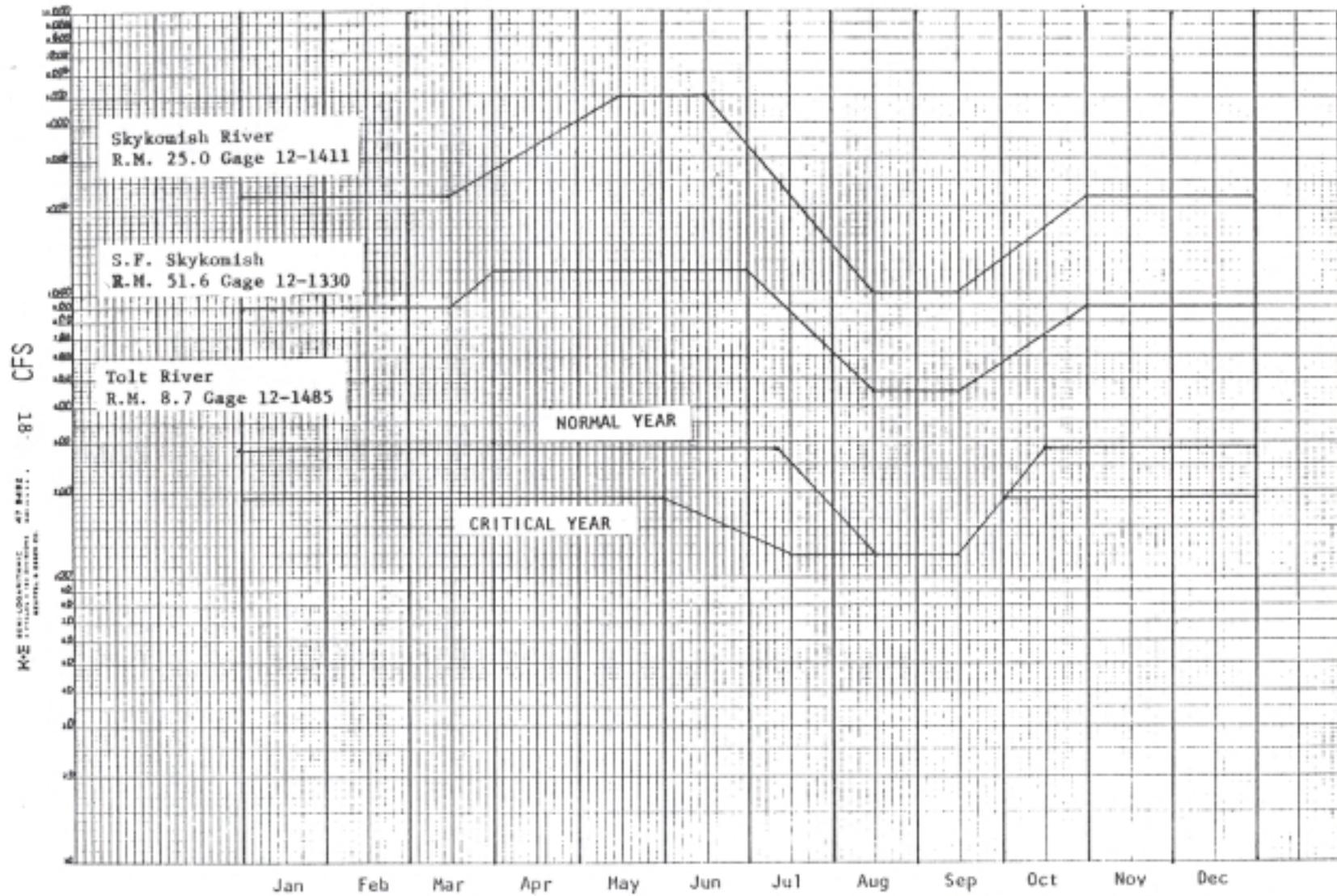


Figure 4. (continued)

INSTREAM FLOW REGULATION

Future water rights will be the only uses of instream resources that will be impacted by instream flow restrictions. New applications for diversions, in regions of the Snohomish Basin under the control of instream flows, will be attached with provisos stating the instream flow operating conditions of the permit. During certain times of the year, as indicated by specified flow levels at a regional control station, future water users will be ordered to cease diverting water. Existing water rights with low flow limitations shall be regulated only after all diversions under rights subject to instream flows have been curtailed. Stream reaches provided with specific base flow figures were presented in Table 2 and Figure 3.

Standard operating procedures will be adopted to administer the streams that are provided with two-stage curves. The normal curve will usually be in operation, but on a one in ten year average there will be a necessity to allow flows to drop below that level. The director will judge the proper amount of exception allowed. Under far less probable occurrence, violation of the critical year curve will be necessary to assure the continued firm supply of municipal water. The director will judge the merits of any such proposal on the basis of benefit to the public.

STREAM REACHES WITHOUT SPECIFIC INSTREAM FLOW FIGURES

The Department of Ecology and the state fish and game authorities have expressed concern over the development of out-of-stream uses on small streams and tributaries. Without direct control, future diversions could result in compliance with a downstream control station, but complete loss of a small stream or reach for further spawning.

An automatic review of proposed diversions can be ordered after a certain number of applications or threshold quantities of diverted water have been attained. If the stream is subsequently found subject to specific instream flows, an additional control station will be established within the subbasin. Standard operating procedures will be adopted to implement the automatic review process.

Table 4.

PROVISIONAL INSTREAM FLOW RECOMMENDATIONS FOR FISH
MADE BY DEPARTMENTS OF GAME & FISHERIES

Stream	Tributary to	Period	Flow Data
<u>Skykomish Subbasin</u>			
Troublesome Creek	N. Fork Skykomish	11/15-7/31	200 cfs
		8/1-8/15	200 cfs to 65 cfs
		8/15-10/15	65 cfs to 140 cfs
		11/1-11/15	140 cfs to 200 cfs
North Fork Skykomish (at Index)	Skykomish River	11/1-4/30	670 cfs
		5/1-5/15	670 cfs to 500 cfs
		5/15-7/31	500 cfs
		8/1-8/15	500 cfs to 230 cfs
		8/15-10/15	230 cfs
		10/15-11/1	230 cfs to 670 cfs
Tye River	S. Fork Skykomish	9/15-4/30	310 cfs
		5/1-5/15	310 cfs to 250 cfs
		5/10-7/31	250 cfs
		8/1-8/15	250 cfs to 170 cfs
		8/10-9/15	170 cfs to 310 cfs
South Fork Skykomish (Near Skykomish)	Skykomish River	9/15-4/30	430 cfs
		5/1-5/10	430 cfs to 330 cfs
		5/10-7/31	330 cfs
		8/1-8/10	330 cfs to 260 cfs
		8/10-9/15	260 cfs to 430 cfs
Beckler River	S. Fork Skykomish	9/15-4/30	410 cfs
		5/1-5/10	410 cfs to 310 cfs
		5/10-7/31	310 cfs
		8/1-8/5	310 cfs to 240 cfs
		8/5-8/31	240 cfs to 410 cfs
Maloney River	S. Fork Skykomish	11/15-7/31	40 cfs
		8/1-8/15	40 cfs to 12 cfs
		8/15-10/10	12 cfs
		10/10-11/15	12 cfs to 40 cfs
Miller River	S. Fork Skykomish	10/15-4/30	280 cfs
		5/1-5/15	280 cfs to 200 cfs
		5/15-7/31	200 cfs
		8/1-8/15	200 cfs to 88 cfs
		8/15-9/30	88 cfs
Money Creek	S. Fork Skykomish	11/15-7/31	87 cfs
		8/1-8/15	87 cfs to 30 cfs
		8/15-10/15	30 cfs
		10/15-11/15	30 cfs to 87 cfs

Index Creek	S. Fork Skykomish	11/15-7/31	66 cfs
		8/1-8/15	66 cfs to 24 cfs
		8/15-10/15	24 cfs
		10/15-11/15	24 cfs to 62 cfs
Proctor Creek	Skykomish River	11/15-7/31	80 cfs
		8/1-8/15	80 cfs to 24 cfs
		8/15-9/31	24 cfs
		9/15-9/30	24 cfs to 77 cfs
		10/1-9/15	77 cfs
Olney Creek	Wallace River	9/15-9/16	77 cfs to 80 cfs
		10/1-7/31	90 cfs
		8/1-8/15	90 cfs to 33 cfs
		8/15-8/31	34 cfs
		9/1-9/15	34 cfs to 85 cfs
May Creek	Wallace River	9/15-9/28	85 cfs
		9/28-9/30	85 cfs to 90 cfs
		9/15-7/31	70 cfs
		8/1-8/10	70 cfs to 33 cfs
		8/10-9/31	33 cfs to 70 cfs
Wallace River (at Gold Bar)	Skykomish River	11/17-7/31	102 cfs
		8/1-8/15	102 cfs to 55 cfs
		8/15-9/15	55 cfs to 96 cfs
		9/15-11/15	96 cfs
Youngs Creek	Elwell Creek	11/15-11/17	96 cfs to 102 cfs
		11/15-7/31	92 cfs
		8/1-8/15	92 cfs to 27 cfs
		8/15-10/10	27 cfs
		10/1-10/31	27 cfs to 52 cfs
Elwell Creek	Skykomish Creek	11/1-11/15	52 cfs to 92 cfs
		11/15-7/31	112 cfs
		8/1-8/15	112 cfs to 35 cfs
		8/15-8/31	35 cfs
		9/1-9/15	35 cfs to 110 cfs
Carpenter Creek	W. Fork Woods Cr.	9/15-11/14	110 cfs
		11/14-11/15	110 cfs to 112 cfs
		11/15-7/31	17 cfs
		8/1-8/15	17 cfs to 6 cfs
		8/15-10/15	6 cfs
West Fork Woods Cr.	Woods Creek	10/15-11/15	6 cfs to 17 cfs
		11/15-7/31	70 cfs
		8/1-8/15	70 cfs to 22 cfs
		8/15-10/10	22 cfs
		10/10-10/20	22 cfs to 36 cfs
Woods Creek	Skykomish River	10/20-10/23	36 cfs
		10/23-11/15	36 cfs to 70 cfs
		11/15-7/31	96 cfs
		8/1-8/15	96 cfs to 35 cfs
		8/15-10/24	35 cfs to 56 cfs
		10/24-11/15	56 cfs to 96 cfs

Middle Fork Snoqualmie River	Snoqualmie River	9/15-7/15	530 cfs
		7/15-7/31	530 cfs to 140 cfs
		7/31-9/15	300 cfs to 530 cfs
S. Fork Tolt	Tolt River	9/15-4/31	160 cfs
		9/15-4/31	160 cfs to 115 cfs
		5/1-5/10	115 cfs
		5/10-7/20	115 cfs to 65 cfs
		7/20-7/31	65 cfs to 160 cfs
Stossel Creek	Tolt River	10/20-7/15	32 cfs
		7/15-7/30	32 cfs to 15 cfs
		7/30-10/20	15 cfs to 32 cfs
Deep Creek	Raging River	11/15-7/15	39 cfs
		7/15-7/31	39 cfs to 12 cfs
		8/1-10/10	12 cfs
		10/10-10/21	12 cfs to 16 cfs
		10/20-11/15	16 cfs to 39 cfs
Patterson Creek	Snoqualmie River	11/15-7/15	35 cfs
		7/15-7/31	35 cfs to 11 cfs
		8/1-10/15	11 cfs
		10/15-11/15	11 cfs to 35 cfs
Griffin Creek	Snoqualmie River	11/15-7/15	73 cfs
		7/15-7/31	73 cfs to 21 cfs
		8/1-9/15	21 cfs
		9/15-10/20	21 cfs to 39 cfs
		10/20-10/23	39 cfs
		10/23-11/15	38 cfs to 73 cfs
Harris Creek	Snoqualmie River	11/15-7/15	30 cfs
		7/15-7/31	30 cfs to 9 cfs
		8/1-10/15	9 cfs
		10/15-11/15	9 cfs to 30 cfs
Cherry Creek	Snoqualmie River	11/15-7/15	80 cfs
		7/15-7/31	80 cfs to 28 cfs
		8/1-10/15	28 cfs
		10/15-11/15	28 cfs to 80 cfs
Tuck Creek	Snoqualmie River	10/20-7/15	11 cfs
		7/15-7/31	11 cfs to 5 cfs
		7/31-10/20	5 cfs to 11 cfs
French Creek	Snohomish River	11/15-6/30	36 cfs
		7/1-7/15	36 cfs to 7 cfs
		7/15-10/5	7 cfs
		10/5-10/20	7 cfs to 15 cfs
		10/20-11/15	15 cfs to 36 cfs
Kelley Creek	Pilchuck River	11/15-7/15	50 cfs
		7/15-7/31	50 cfs to 11 cfs
		8/1-9/31	11 cfs
		10/1-10/31	11 cfs to 28 cfs
		11/1-11/15	28 cfs to 50 cfs

Worthy Creek	Pilchuck River	11/15-7/15	40 cfs
		7/15-7/31	40 cfs to 11 cfs
		8/1-10/7	11 cfs
		10/7-10/31	11 cfs to 22 cfs
		11/1-11/15	22 cfs to 40 cfs
Pilchuck River	Snohomish River	11/15-7/15	255 cfs
		7/15-7/31	255 cfs to 85 cfs
		8/1-10/15	85 cfs to 190 cfs
		10/15-10/31	190 cfs
		11/1-11/15	190 cfs to 255 cfs
Quilceda Creek*	Possession Sound	11/15-6/30	36 cfs
		7/1-7/15	36 cfs to 9 cfs
		7/15-9/31	9 cfs
		10/1-10/20	9 cfs to 19 cfs
		10/20-10/23	19 cfs
Mission Creek*	Possession Sound	10/23-11/15	19 cfs to 36 cfs
		11/15-6/31	31 cfs
		7/1-7/15	31 cfs to 7 cfs
		7/15-10/7	7 cfs
		10/7-10/20	7 cfs to 14 cfs
Tulalip Creek*	Possession Sound	10/20-10/22	14 cfs
		10/22-11/15	14 cfs to 31 cfs
		11/15-6/30	47 cfs
		7/1-7/15	47 cfs to 12 cfs
		7/15-9/31	12 cfs
		10/1-10/20	12 cfs to 24 cfs
		10/20-10/24	24 cfs
		10/24-11/15	24 cfs to 47 cfs

*Wholly or in part on the Tulalip Indian Reservation. See letter of comment from the Tulalip Tribes in Appendix C.

SUPPORT DOCUMENTS

Program Overview

- Washington State Department of Ecology, 1976. Streamflow Preservation Program. M. Edward Garling, Office of Water Programs, Olympia, WA. Water Resources Information System Technical Bulletin No. 11.
- Washington State Department of Ecology, April, 1979. Draft Environmental Impact Statement (including Program Overview). Western Washington Instream Resources Protection Program. Olympia, WA.

Basin Description

- Pacific Northwest River Basins Commission, 1971. Puget Sound and adjacent Waters. Puget Sound Task Force of the PNWRBC. Summary Report plus 15 separately bound appendices.
- Washington State Department of Ecology, 1978. Inventory of Studies, Plans, and Reports Pertaining to the Snohomish River Basin, Washington. Patricia Edmundson for the Snohomish Level B Study Team.

Water Resources

- City of Seattle, May, 1979. Seattle Comprehensive Regional Water Plan and Draft Environmental Impact Statement. Seattle Water Department.
- Pacific Northwest River Basins Commission, 1979. Snohomish River Basin Resource Management Program, Draft Interim Report (Working Paper).
- Snohomish Level B Study Team. Snohomish County Public Utility District No. 1, April 1979. Sultan River Project - Stage II, Final SEPA EIS and FERC Environmental Report (Exhibit W). Bechtel Incorporated.
- Snomet/King County 208 Study, November 1977. Areawide Water Quality Management Plan. Snohomish County Metropolitan Municipal Corporation, Everett, Washington.
- U.S. Army Corps of Engineers, April 1979. Regional Water Supply Study, Snohomish Mediated Plan Feasibility Study. M & I Study Group, Seattle, Washington.

Fisheries

- City of Seattle, July 1978. Existing Bodies of Water on the Cedar and Tolt River Watersheds and Their Potential for Fisheries Production. Seattle Water Department.
- United States Geological Survey, 1979. Preferred Stream Discharges for Salmon Spawning and Rearing in Washington, USGS open-file report 77-422. USGS Tacoma, Washington.
- United States Geological Survey, 1976. Estimation of Stream Discharge Preferred by Steelhead for Spawning and Rearing in Western Washington. USGS Tacoma, Washington.

APPENDIX A
Chapter 173-507 WAC
INSTREAM RESOURCES PROTECTION PROGRAM
FOR THE SNOHOMISH RIVER BASIN, WATER RESOURCES INVENTORY
AREA (WRIA) 7

WASHINGTON STATE DEPARTMENT OF ECOLOGY

INSTREAM RESOURCES PROTECTION PROGRAM
FOR THE SNOHOMISH RIVER BASIN, WRIA-7

Chapter 173-507 WAC

Statutory Authority: Water Resources Act of 1971
 Chapter 90.54 RCW
 Minimum Water Flow and Levels
 Chapter 90.22 RCW
 Water Resources Program
 Chapter 173-500 WAC

Chapter 173-507 WAC
 INSTREAM RESOURCES PROTECTION PROGRAM – –
 SNOHOMISH RIVER BASIN, WATER RESOURCE INVENTORY
 AREA (WRIA) 7

NEW SECTION

WAC 173-507-010 GENERAL PROVISION. These rules apply to surface waters within the Snohomish River Basin, WRIA-7 (see WAC 173-500-040). Chapter 173-500 WAC, the general rules of the department of ecology for the implementation of the comprehensive water resources program, applies to this chapter 173-507 WAC.

NEW SECTION

WAC 173-507-020 ESTABLISHMENT OF INSTREAM FLOWS. (1) Instream flows are established for stream management units with monitoring to take place at certain control stations as follows:

STREAM MANAGEMENT UNIT INFORMATION

Control Station No. Stream Management Unit Name	Control Station by River Mile and Section, Township and Range	Affected Stream Reach Including Tributaries
12.1330.00 So. Fk. Skykomish River	51.6 28-27-10E	From confluence with N. Fk. Skykomish River to headwaters
12.1381.50 Sultan River	5.1 17-28-8E	From mouth to headwaters.
12.1411.00 Skykomish River	25.0 12-27-6E	From mouth to headwaters, excluding So. Fk. Skykomish River and Sultan River.
12.1430.00 No. Fk. Snoqualmie	2.2 26-24-8E	From mouth to headwaters.
12.1445.00 Snoqualmie River	40.0 19-24-8E	From Snoqualmie Falls to headwaters, excluding No. Fork Snoqualmie River.

Control Station No. Stream Management Unit Name	Control Station by River Mile and Section, Township and Range	Affected Stream Reach Including Tributaries
12.1485.00 Tolt River	8.7 31-26-8E	From confluence with N. Fk. Skykomish River to headwaters.
12.1490.00 Snoqualmie River	23.0 9-25-7E	From confluence with Harris Creek to Snoqualmie Falls, excluding Tolt River.
12. Snoqualmie River	2.5 26-27-6E	From mouth to confluence with Harris Creek, including Harris Creek.
12.1554.00 Pilchuck River	1.9 18-28-6E	From mouth to headwaters.
12.1508.00 Snoqualmie River	20.4 16-27-6E	From influence of mean annual high tide at low base flow levels to confluence with Skykomish river and Snoqualmie River, excluding Pilchuck River.

(2) Instream flows established for the stream management units in WAC 173-507-020(1) are as follows:

INSTREAM FLOWS IN THE SNOHOMISH RIVER BASIN
(in Cubic Feet Per Second)

Month	Day	12.1330.00 So. Fk. Skykomish	12.1411.00 Skykomish	12.1430.00 No. Fk. * Snoqualmie	No. Fk.** Snoqualmie
Jan.	1	900	2200	260	200
	15	900	2200	260	200
Feb.	1	900	2200	260	200
	15	900	2200	260	200
Mar.	1	900	2200	260	200
	15	900	2200	260	200
Apr.	1	1100	2650	300	200
	15	1250	3250	300	200
May	1	1250	4000	300	200
	15	1250	4900	300	200

Month	Day	12.1330.00	12.1411.00	12.1430.00	No. Fk.**
		So. Fk. Skykomish	Skykomish	No. Fk.* Snoqualmie	Snoqualmie
June	1	1250	4900	300	200
	15	1250	4900	300	200
July	1	1250	3250	300	200
	15	950	2170	195	140
Aug.	1	650	1450	130	100
	15	450	1000	130	100
Sept.	1	450	1000	130	100
	15	450	1000	130	100
Oct.	1	550	1300	130	130
	15	700	1700	165	165
Nov.	1	900	2200	210	200
	15	900	2200	260	200
Dec.	1	900	2200	260	200
	15	900	2200	260	200

* Normal year flows must be maintained at all times unless a critical condition is declared by the director. The director, or his designee, may authorize, in consultation with the state departments of fisheries and game, a reduction in instream flows during a critical condition period. At no time are diversions subject to this regulation permitted for any reason when flows fall below the following critical year flows, except where a declaration of overriding considerations of public interest is made by the director.

**Critical year flows represent flows below which the department believes substantial damage to instream values will occur.

Month	Day	12.1381.50	12.1445.00	12.1484.00	Tolt River**
		Sultan	Snoqualmie (above Falls)	Tolt River*	
Jan.	1		1550	280	190
	15		1550	280	190
Feb.	1		1550	280	190
	15		1550	280	190
Mar.	1		1550	280	190
	15		1550	280	190
Apr.	1		1550	280	190
	15		1550	280	190
May	1		1550	280	190
	15		1550	280	190
June	1		1550	280	190
	15		1550	280	165
July	1		1550	280	140
	15		1100	240	120
Aug.	1		770	170	120
	15		600	120	120

Month	Day	12.1381.50 Sultan	12.1445.00 Snoqualmie (above Falls)	12.1485.00 Tolt River*	Tolt River**
Sept.	1		600	120	120
	15		600	120	120
Oct.	1		820	190	185
	15		1100	280	190
Nov.	1		1550	280	190
	15		1550	280	190
Dec.	1		1550	280	190
	15		1550	280	190

* Normal year flows must be maintained at all times unless a critical condition is declared by the director. The director, or his designee, may authorize, in consultation with the state departments of fisheries and game, a reduction in instream flows during a critical condition period. At no time are diversions subject to this regulation permitted for any reason when flows fall below the following critical year flows, except where a declaration of overriding considerations of public interest is made by the director

**Critical year flows represent flows below which the department believes substantial damage to instream values will occur.

Month	Day	12.1490.00 Snoqualmie (Carnation)	12. Snoqualmie (mouth)	12.1554.00 Pilchuck R.	12.1508.00 Snohomish R.
Jan.	1	2500	2800	300	6000
	15	2500	2800	300	6000
Feb.	1	2500	2800	300	6000
	15	2500	2800	300	6000
Mar.	1	2500	2800	300	6000
	15	2500	2800	300	6000
Apr.	1	2500	2800	300	6000
	15	2500	2800	300	6000
May	1	2500	2800	300	6000
	15	2500	2800	300	6000
June	1	2500	2800	300	6000
	15	2500	2800	300	6000
July	1	1850	2180	220	5700
	15	1300	1550	160	4000
Aug.	1	950	1080	120	2800
	15	700	800	85	2000
Sept.	1	700	800	85	2000
	15	700	800	85	2000
Oct.	1	1050	1200	130	2900
	15	1650	1850	200	4000

Month	Day	12.1490.00 Snoqualmie (Carnation)	12. Snoqualmie (mouth)	12.1554.00 Pilchuck R.	12.1508.00 Snohomish R.
Nov.	1	2500	2800	300	6000
	15	2500	2800	300	6000
Dec.	1	2500	2800	300	6000
	15	2500	2800	300	6000

(3) Instream flow hydrographs, as represented in the document entitled "Snohomish River Instream Resource Protection Program," shall be used for definition of instream flows on those days not specifically identified in WAC 173-507-020(2).

(4) All consumptive water rights hereafter established shall be expressly subject to the instream flows established in WAC 173-507-020(1) through (3).

(5) At such time as the departments of fisheries and/or game and the department of ecology agree that additional stream management units should be defined, other than those specified in WAC 173-507-020(1), the department of ecology shall identify additional control stations and management units on streams and tributaries within the basin and shall set instream flows where possible for those stations as provided in chapters 90.22 and 90.54 RCW

NEW SECTION

WAC 173-507-030 SURFACE WATER SOURCE LIMITATIONS TO FURTHER CONSUMPTIVE APPROPRIATIONS. (1) The department having determined further consumptive appropriations would harmfully impact instream values, adopts instream flows as follows confirming surface water source limitations previously established administratively under authority of chapter 90.03 and RCW 75.20.050.

LOW FLOW LIMITATIONS

Stream	Limitation	Point of Measurement
Evans Creek, Tributary to Lake Beecher	No diversion when flow drops below 2.0 cfs.	800 ft. So. and 800 ft. east of center of Sec. 7, T. 27 N., R. 6 E.W.M.
Foye Creek, Tributary to Riley Slough	No diversion when flow drops below 4.0 cfs.	750 ft. So. and 325 ft. east of N¼ cor. of Sec. 18, T. 27 N., R. 6 E.W.M.

Stream	Limitation	Point of Measurement
French Creek, Tributary to Snohomish River	No diversion when flow drops below 0.75 cfs.	125 ft. No. and 1300 ft. west of E $\frac{1}{4}$ of Sec. 20, T. 28 N., R. 6 E.W.M.
Langlois Creek, Tributary to Tolt River	No diversion when flow drops below 3.0 cfs.	1040 ft. No. and 1250 ft. east of SW $\frac{1}{4}$ cor. of Sec. 22, T. 25 N., R. 7 E.W.M.
Tate Creek, Tributary to No. Fk. Snoqualmie River	No diversion when flow drops below 2.0 cfs.	900 ft. east and 870 ft. No. of W $\frac{1}{4}$ cor. of Sec. 26, T. 24 N., R. 8 E.W.M.
Tulalip Creek, Tributary to Tulalip Bay	No diversion when flow drops below 2.5 cfs.	1125 ft. west and 125 ft. No. of S $\frac{1}{4}$ cor. of Sec. 22, T. 30 N., R. 4 E.W.M.
Unnamed Stream (Coon Creek), Tributary to Pilchuck River	No diversion when flow drops below 1.0 cfs.	480 ft. No. and 240 ft. west of center of Sec. 19, T. 30 N., R. 7 E.W.M.
Unnamed Stream (Coon Creek), Tributary to Pilchuck River	One-half of low flow must be bypassed.	800 ft. east and 1100 ft. So. of W $\frac{1}{4}$ cor. of Sec. 19, T. 30 N., R. 7 E.W.M.
Unnamed Stream (Coon Creek), Tributary to Cherry Creek	No diversion when flow drops below 1.0 cfs.	1000 ft. So. and 400 ft. west of NE cor. of Sec. 16, T. 26 N., R. 7 E.W.M.
Unnamed Stream, Tributary to McCoy Creek	No diversion when flow drops below 1.0 cfs.	600 ft. west and 100 ft. No. of SE cor. of Sec. 5, T. 27 N., R. 8 E.W.M.
Unnamed Stream, Tributary to Snoqualmie River	No diversion when flow drops below 0.5 cfs.	350 ft. west and 100 ft. No. of SE cor. of Sec. 5, T. 27 N., R. 8 E.W.M.
Unnamed Stream (Solberg Creek), Tributary to Snoqualmie River	No diversion when flow drops below 30.0 cfs.	600 ft. west and 1050 ft. No. of E cor. of Sec. 12, T. 25 N., R. 6 E.W.M.

Stream	Limitation	Point of Measurement
Unnamed Stream, Tributary to Snoqualmie River	One-half of low flow must be bypassed.	500 ft. So. and 1120 ft. east of center Sec. 28, T. 25 N., R. 7 E.W.M.
Unnamed Stream, Tributary to Snoqualmie River	No diversion when flow drops below 1.0 cfs.	600 ft. No. of E $\frac{1}{4}$ cor. of Sec. 28, T. 25 N., R. 7 E.W.M.
Wood Creek, Tributary to Snohomish River	No diversion when flow drops below 0.75 cfs.	335 ft. No. and 130 ft. east of S $\frac{1}{4}$ cor. of Sec. 8, T. 28 N., R. 5 E.W.M.
Woods Creek, Tributary to Skykomish River	No diversion when flow drops below 11.0 cfs.	Immediately below confl. of West Fork in SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 33, T. 28 N., R. 7 E.W.M.
Woods Creek, Tributary to Skykomish River	No diversion when flow drops below 6.0 cfs.	Immediately above said confl. of West Fork.
Woods Creek, Tributary to Skykomish River	No diversion when flow drops below 2.5 cfs.	Immediately above confl. of Roesigner Cr. in NE $\frac{1}{4}$ NW $\frac{1}{4}$ of Sec. 3, T. 28 N., R. 7 E.W.M.
Woods Creek, Tributary to Skykomish River	No diversion when flow drops below 0.5 cfs.	Roesigner Creek, immediately above said confl. with Woods Creek
Woods Creek, Tributary to Skykomish River	No diversion when flow drops below 5.0 cfs.	West Fork, immediately above said confl. with Woods Creek.
Woods Creek, Tributary to Skykomish River	No diversion when flow drops below 2.5 cfs.	West Fork when it crosses the No. line of Sec. 5, T. 28 N., R. 7 E.W.M.
Unnamed Lake (Morris Lake), Tributary to Horseshoe Lake	No diversion when flow drops below 1.0 cfs.	Lake outlet of NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Sec. 9, T. 25 N., R. 7 E.W.M.

Note: Affected stream reaches extend from mouth to headwaters and include all tributaries in the contributing drainage area unless specifically excluded.

(2) The department, having determined there are no waters available for further appropriation through the establishment of rights to use water consumptively, closes the following streams to further consumptive appropriation for the periods indicated. These closures confirm surface water source limitations previously established administratively under authority of chapter 90.03 RCW and RCW 75.20.050.

SURFACE WATER CLOSURE

<u>Stream</u>	<u>Date of Closure</u>	<u>Period of Closure</u>
Griffin Creek, Tributary to Snoqualmie River	9/22/53	All year
Harris Creek, Tributary to Snoqualmie River	1/20/44	All year
Little Pilchuck Creek, Tributary to Pilchuck River	5/6/52	All year
May Creek, Tributary to Wallace River	10/13/53	All year
Patterson Creek, Tributary to Snoqualmie River	2/19/52	All year
Quilceda Creek, Tributary to Ebey Slough	6/10/46	All year
Raging River, Tributary to Snoqualmie River	9/20/51	All year
Unnamed Stream (Bodell Creek), Tributary to Pilchuck River	9/6/51	All year

NEW SECTION

WAC 173-507-040 GROUND WATER. In future permitting actions relating to ground water withdrawals, the natural interrelationship of surface and ground waters shall be fully considered in water allocation decisions to assure compliance with the meaning and intent of this regulation.

NEW SECTION

WAC 173-507-050 EXEMPTIONS. (1) Nothing in this chapter shall affect existing water rights, riparian, appropriative, or otherwise, existing on the effective date of this chapter, nor shall it affect existing rights relating to the operation of any navigation, hydroelectric or water storage reservoir or related facilities.

(2) Domestic in-house use for a single residence and stock watering, except that related to feed lots, shall be exempt.

NEW SECTION

WAC 173-507-070 FUTURE RIGHTS. No right to divert or store public surface waters of the Snohomish WRIA 7 shall hereafter be granted which shall conflict with the instream flows and closures established in this chapter. Future rights for nonconsumptive uses, subject to the conditions herein established, may be granted.

NEW SECTION

WAC 173-507-070 ENFORCEMENT. In enforcement of this chapter, the department of ecology may impose such sanctions as appropriate under authorities vested in it, including but not limited to the issuance of regulatory orders under RCW 43.27A.190 and civil penalties under RCW 43.83B.335.

NEW SECTION

WAC 173-507-080 REGULATION REVIEW. The rules in this chapter shall be reviewed by the department at least once in every five-year period.

APPENDIX B

SUPPLEMENTAL
ENVIRONMENTAL IMPACT
STATEMENT

SUPPLEMENTAL
Environmental Impact Statement

Snohomish River Basin
Instream Resources Protection Program

State of Washington
Department of Ecology

August 1979

INTRODUCTION

The Washington State Department of Ecology proposes to establish instream flows on the streams and tributaries of the Snohomish River Basin (WRIA 7). An instream flow is a legal limit which may restrict future appropriation of the surface water resource. Permits issued after adoption of this instream flow regulation will be conditioned to the instream, flow levels, limiting diversion to only periods when the flow in the stream meets or exceeds the prescribed levels.

The Snohomish River Basin has been considered independent from other river basins. The foregoing program document and proposed rules have presented the relevant factors concerning instream resources of the Snohomish Basin. Instream flows will be established through formal adoption of the regulation.

This supplemental EIS is specific to the Snohomish River Instream Resources Protection Program. The manner in which the Snohomish program was formulated was described earlier under this cover ("Program Document"). Available environmental data was analyzed and included in that section and is referred to throughout this supplemental EIS. The program overview document and EIS for the Western Washington Instream Resources Protection Program was initially published as a draft in April 1979 and was issued in final form on June 21, 1979 (copies available from DOE). Findings and conclusions, of which this Snohomish program is part, concerning methodology, program alternatives, and generalized impacts are referenced from that overall program source.

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Licenses Required: Department of Ecology - Adoption of proposed rules

Background Data: See accompanying Program Document

Cost to the Public: Individual copies of this EIS may be obtained free from DOE.

Date of Issue: August 28, 1979

Distribution: See Appendix II

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SUMMARY

The Department of Ecology (herein referred to as the department) proposes to adopt instream flows for the rivers and streams in the Snohomish River Basin (WRIA 7). Instream flows will be established at specific control locations. Future water rights will be conditioned to such flows so that future out-of-stream appropriations subject to the flows will cease diversion when the stated flow levels are not available in that stream. Future diversions may resume when water levels reach the prescribed thresholds.

Fish and wildlife will benefit directly from the provision of instream flows. Other environmental aspects that will be affected positively by the regulation are navigation, water quality, aesthetics, and recreation. Optional approaches to the program could result in eventually setting comparable flow levels, but delays in accomplishing required analysis could endanger instream resources. Three main areas of impact assessment are addressed: water rights management, environmental resources, and economic values.

The Snohomish River Instream Resources Protection Program will cause adverse impacts to potential future municipal and industrial water supply development, the potential new development for generation of hydroelectric power, and future developed irrigation water use. Municipal water supply yields may be diminished due to requirements that diversions cease during periods when stream flow is at or below instream flow levels. Impacts to municipal water supply yields would be mitigated by providing critical year conditions on some streams.

PROPOSED ACTION

The department proposes to develop and adopt instream flows for the Snohomish River Basin pursuant to Chapter 90.54 RCW, the Water Resources Act of 1971, and Chapter 90.22 RCW, Minimum Flows and Water Levels. Draft administrative rules proposed to be adopted under Chapter 173-507 WAC will establish specific instream flow levels at control locations throughout the basin. The foregoing program document contains a full description of the control network system derived for the Snohomish River Basin.

The proposed action is not in conflict with any comprehensive land use plans. Indirect effects upon regional growth could result from limits the proposed program may place upon the availability of future developed water supply. The proposed instream flows are different and in conflict with assumed flows published in Seattle Water Department's Comprehensive Plan. Water supply yield from a future North Fork Tolt diversion is presented in Table 6, page 15.

EXISTING ENVIRONMENTAL CONDITIONS

The proposed instream resources protection program has been developed to manage a valuable, but partially developed, natural environment. The environmental condition of the Snohomish River Basin has been extensively

analyzed and documented through this and other federal, state, and local planning programs. (See Appendix I, Documents Incorporated by Reference.) Relevant environmental factors and Snohomish River instream resources were discussed in the previous program document.

The Snohomish River Basin Instream Resources Protection Program will protect instream flows from future deterioration. The primary beneficiary of the proposed regulation will be instream uses. Anadromous and resident fisheries depend on adequate streamflow, particularly in the late summer and early fall while spawning occurs, and wildlife depends on water-related riparian habitat. Navigation, water quality, aesthetics, recreation, and other environmental factors will receive protection from the establishment of instream flows.

IMPACT ANALYSIS

The EIS for the overall Western Washington Instream Resources Protection Program has considered environmental effects of the proposed rules on elements of the environment. (See Appendix I of the EIS for the overall program.) These will not be discussed in this Supplemental EIS. The following impact analysis will concern the specific flow levels proposed for streams in the Snohomish Basin. Each recommended level will have an accompanied group of impacts upon the instream resources and out-of-stream uses of the basin.

The discussion of the Snohomish River Instream Resources Protection Program will concentrate on the impacts of specific flows upon instream resources and development projects in the basin. The focus of the present analysis will be to quantify the effect of different levels of instream flows upon instream user groups. The Snohomish River Instream Resources Protection Program will cause environmental impacts in the major areas of environmental and economic values.

Environmental Resources

The Snohomish River Instream Resources Protection Program will seek to protect valuable natural resources and recreational opportunities in the basin. These objectives are assessed as environmental quality measures which can be claimed as benefits of the program. Among the components of these environmental quality objectives are fish and wildlife, water quality, aesthetics, and recreational opportunities. In addition, navigation (recreational and commercial) is an instream water use benefited by instream flows.

To assess these resources in an evaluation of impacts, it is necessary to quantify the extent to which these resources will be protected by the instream flows program. Methodological problems prohibit accurately estimating the magnitude of all instream resources in the Snohomish River Basin. Fisheries and recreational opportunities are analyzed to determine their values, as affected by the instream flows set by the department. The analysis of impacts on specific instream resources, particularly as it relates to fisheries, will be accomplished by comparing levels of instream resource parameters at the proposed flows and those expected under optimum conditions.

The impacts of the Instream Resources Protection Program can be evaluated for the effect of flow levels on fish spawning, rearing, potential production, and harvesting. The analysis recognizes some particular problems in assessing fish production, especially the relationship of the spawnable area to actual production. These difficulties will be pointed out as they occur in the analysis. The fisheries production will be looked at for the whole basin and for the isolated subdrainage of the Tolt River.

It is felt that fish represent the most sensitive instream resource, and impacts upon their production are indicative of the effect of the proposed instream flows on all other instream resources.

Recreational Opportunities

The instream resources of the Snohomish River Basin offer tremendous environmental values which can be enjoyed in a variety of recreational pursuits. The many streams and lakes in the basin provide abundant opportunities for water-related activities, among which are camping, picnicking, swimming, fishing, boating, walking, and hiking. The close proximity to the Seattle-Metropolitan area will assure the continued utilization of this basin for recreational activities.

The Western Washington Instream Resources Protection Program proposes standards be set that will limit future diversions of streamflows during low-flow periods. Generally, recreation will be benefited by the prescribed flows. To assess possible adverse impacts upon recreation, the following analysis compares the proposed flows to those required for white water kayaking. Though a specialized water contact sport, enjoyed by relatively few, kayaking represents an intense use of streamflow, requiring significantly higher instream flows than swimming, fishing, or passive recreational activities.

Impact Analysis. White water canoeing and kayaking requirements for "favorite" streams have been investigated by Gilbert Bortleson (DOE, January 1974). Some problems in matching control stations were encountered, but at least three locations in the Snohomish River Basin can be utilized for comparison to the proposed instream flows.

Table 1 indicates partial fulfillment of white water canoeing and kayaking minimum flow requirements through the proposed instream flow. In most years, considerably more water will flow during all periods of the year, eliminating adverse impacts upon this form of recreation. This indicates a generally favorable trend in the relationship of the proposed flows and recreational, scenic, and environmental quality measures. This is intended as an indicator of relationship only, and does not quantify impacted values.

Fisheries

Fish propagation, migration, and harvesting represents the most important consideration in environmental management. Sensitive to many instream factors, fish well being is a prime

Table 1. Comparison of Whitewater Canoeing and Kayaking Flows to Instream Resources Protection Flows

Whitewater Canoeing and Kayaking (Bortleson, 1974)		Instream Resources Protection (DOE, 1979)		Adverse Impacts
Location	Flows (cfs)	Location	Flows (cfs)	
Skykomish River (at Sunset Falls)	900-1200	Skykomish River (at Index, WA) No. 12-1330	450-2000	Minimum whitewater sports flows met, except Aug. 1 to Nov. 15 (75/100 yrs.)*
Skykomish River (at Big Eddy)	1400-1700	Skykomish River (at Monroe, WA) No. 12-1411	975-4900	Minimum whitewater sports flows met, except Aug. 15 to Nov. 15 (71/100 yrs.)*
North Fork Snoqualmie River No. 12-1430	350-450	North Fork Snoqualmie River No. 12-1430	95-450	Minimum whitewater sports flows met April 1 to July 1 only (71/100 yrs.)*

*Percent flow duration indicates period in which flow levels will be equaled or exceeded. For the North Fork Snoqualmie River example, the flow levels will be achieved 71 of 100 years, under natural conditions.

Table 2. Snohomish River Basin Fisheries Data (1967 - 76) 1/

Species	Mean Annual Escapement	C:E	Total Catch	Sport		Commercial		Total Mean Annual Value
				Catch	Value	Catch	Value	
NATURAL SALMON PRODUCTION AND VALUE								
Chinook	4,000	3:1	14,847	7,225	\$ 202,300	7,624	\$ 144,856	\$ 347,156
Coho	40,000	4:1	160,000	45,520	1,274,560	144,480	892,944	2,167,504
Pink	93,120	2:1	186,240	2,756	38,584	183,484	497,242	535,826 <u>2/</u>
Chum	5,645	1:1	<u>5,645</u>	—	—	5,645	58,934	<u>58,934</u>
Totals			396,732					\$ 3,109,430
POTENTIAL NATURAL SALMON PRODUCTION AND VALUE								
Chinook	30,720	3:1	92,160	44,846	\$1,255,660	47,315	\$ 898,985	\$2,154,645
Coho	182,200	4:1	728,800	207,344	5,805,632	521,456	4,067,357	9,872,989
Pink	446,250	2:1	892,500	13,209	184,926	879,291	2,382,879	2,567,805 <u>2/</u>
Chum	42,290	1:1	<u>42,290</u>			42,290	441,508	<u>441,508</u>
Totals			1,755,750					\$15,036,947
EXISTING HATCHERY SALMON PRODUCTION AND VALUE								
Chinook	1,645	3:1	4,935	2,401	\$ 67,228	2,534	\$ 48,146	\$ 115,374
Coho	13,970	4:1	<u>55,880</u>	15,898	445,144	39,982	311,860	<u>\$ 757,004</u>
Totals			60,815					\$ 872,378

1/ Source: Snohomish River Basin Resource Management Program, Draft Technical Analysis: Pacific Northwest River Basins Commission; March 1979.

2/ Pink Salmon only return during odd-numbered years. Total value divided by 2 used in calculating total mean annual value.

indicator of the man-nature balance. Because the Western Washington Instream Resources Protection Program sets flows for critical summer periods, the fish population will be the most affected use of instream resources. Not only must the fish be protected, but the whole food chain of intermediate organisms found in the streams.

There is a lack of consensus among technicians and authorities about the exact flow levels desirable for fish propagation. Rearing and other life-phases besides spawning and incubation are important to the fisheries resource. In addition, a variety of species, each with complicated and individual biological constraints, must be managed. In some cases, agencies involved with streamflow management are faced with conflicting objectives. Regardless, the success of this regulatory action should be assessed by its impact upon fisheries.

Table 2 shows the production and value of anadromous fisheries in the Snohomish River Basin. The significance of the findings of potential anadromous fish production in the Snohomish River Basin is the apparent depressed current situation. The current situation displays the fisheries resources as large in number and value, but only a fraction of its potential.

The proposed instream flows will not return water to the Snohomish River and tributaries already committed to appropriation, nor will the current program develop sufficient information to estimate the actual availability of water resources in the basin. Rather, by setting instream flows from historical streamflow data, the program will determine a level of resource protection that can be expected to be attained relatively frequently.

That constraining resource protection level will create conditions that will have an impact upon the important anadromous fisheries of the Snohomish River Basin. The proposed flows are not the "optimum" for fish. However, they do represent flows that should permit the improvement of fish production well over the present levels.

Impact Analysis. Instream flows will be judged for adequacy upon whether conditions suitable to life-stages (spawning, rearing) can be achieved. Each of the four species of salmon studied has a slightly different relationship to instream factors of depth, velocity, and substrate as investigated by the USGS study displayed in Table 3. Other variables of water quality, temperature, and food are considered constant (for this discussion). The substrate would seem, in most cases, to be relatively fixed upon the need for a coarse gravel streambed in order for spawning and incubation to occur. Isolating the variables of depth and velocity, it is possible to describe the governing conditions which the species will inhabit as spawnable area.

Table 3 Preferred Discharges and Velocities for Salmon Species 1/

Species	Minimum Depth (ft.)	Velocity (ft./sec.)
Chinook	1.0	1.00 - 3.00
Coho	.5	1.00 - 2.50
Pink	.5	.25 - 2.50
Chum	.5	.75 - 3.25
Steelhead Trout <u>2/</u>	.7	1.20 - 3.30

1/ Preferred Stream Discharge for Salmon Spawning and Rearing in Washington; U. S. Geological Survey; Open-File Report 77-442- Tacoma, WA., 1979. P

2/ Estimation of Stream Discharges Preferred by Steelhead Trout for Spawning and Rearing in Western Washington; U.S. Geological Survey; Open-File Report 75-155; Tacoma, WA, 1976.

The criteria for salmon rearing was set as the wetted perimeter covering the streambed from the toe of one bank to the toe of the other bank. In most channels, wetted perimeter increases little as water level increases from the bottom to top of the banks.

The state departments of Fisheries and Game have supplied information on spawnable area and instream flow levels to the Western Washington Instream Resources Protection Program. Using the U.S. Geological Survey data and methods, fisheries has constructed graphs showing the relationship between instream flows and spawnable area for some Western Washington streams. The amount of spawnable area available will determine potential salmon productivity.

The period of the year when the four salmon species found in the Snohomish River Basin actually return to the streams for spawning and rearing differs. Chinook and pink salmon will be expected to spawn during late September and October. Other species, coho, and chum will spawn from late November till early January. Chinook rear during spring months, while coho rear throughout the year. It is during the early fall when low streamflow levels will have a significant effect on spawnable area for the fish. The impact of instream flows on spawnable areas will be assessed for the chinook and pink spawning period, normally during late September, October and November. The streams considered for this impact assessment are the South Fork Skykomish River, Snoqualmie River at Carnation, and the Tolt River.

Table 4 shows flows recommended in the instream flow program for streams in the Snohomish River Basin. These examples display the high degree of instream resources protection for fish spawning provided by the proposed (DOE) flows.

Economic Values

Since the proposed rules reserve a sizable amount of streamflow for instream use, they have an adverse economic impact on future established consumptive uses that require streamflow diversions. During some periods, particularly low-flow summer months, conditions may be such

Figure 1. Tolt River Flow Recommendations

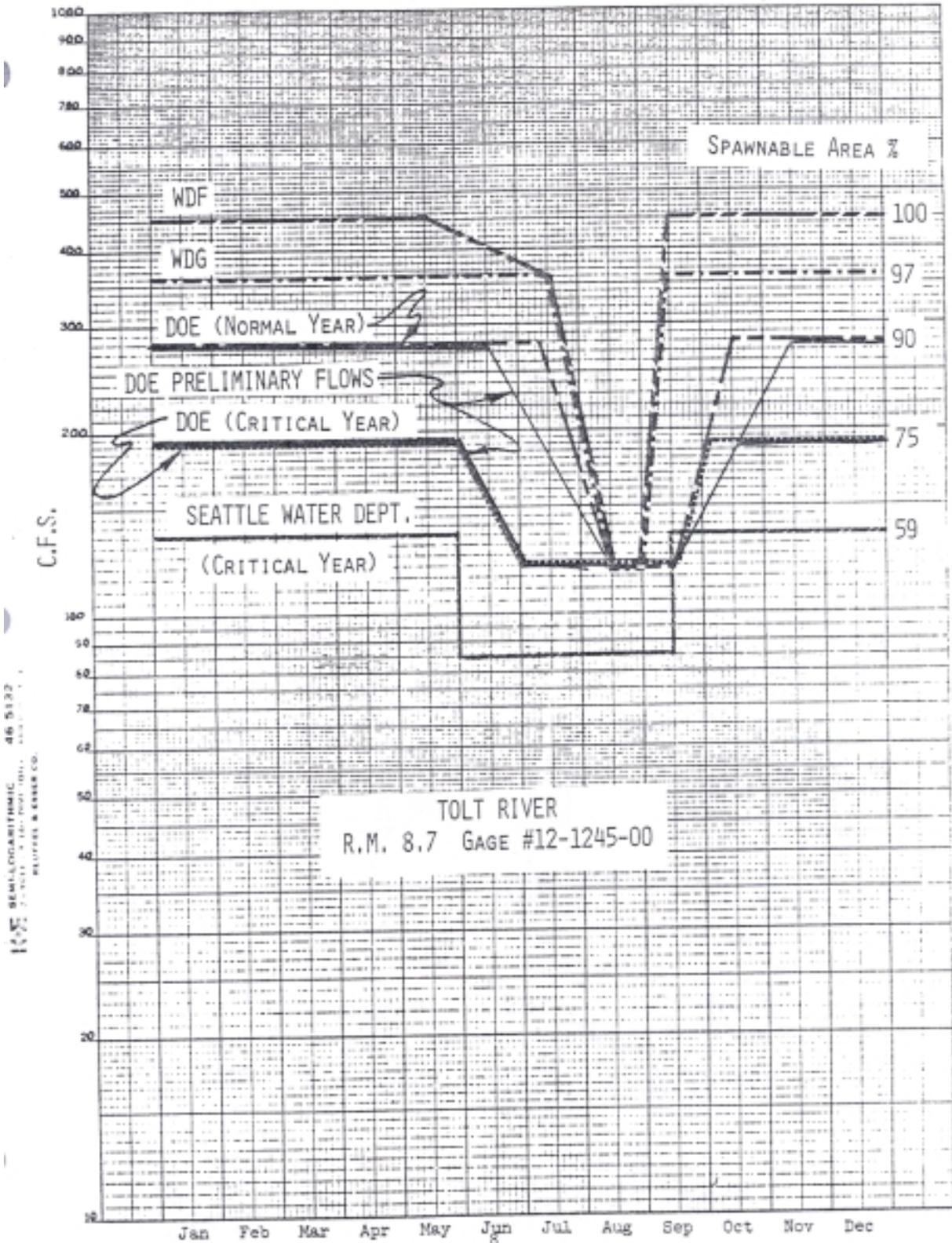


Figure 1. Tolt River Flow Recommendations

Table 4. Instream Flow Impacts to Spawning Area

Agency	Period of Spawning	Instream Flow (cfs)	Percent of Spawning Area
SOUTH FORK SKYKOMISH RIVER		R.M. 51.6	GAGE 12.1330.00
Ecology	Sep 15	660	95
	Nov 15	900	
Fisheries (Salmon) Optimum	Sep 15	1170	100
	Nov 15	1170	
Game (Steelhead) Optimum	Oct 15	400	100
	Nov 15	775	
SNOQUALMIE RIVER AT CARNATION		R.M. 23.0	GAGE 12.1490.00
Ecology	Sep 15	660	90
	Oct	1100	
	Nov 15	2500	
Fisheries (Salmon)	Sep 15	660	90
	Oct 1	1900	
	Nov 15	2500	
Game (Steelhead) Optimum	Oct 15	660	100
	Nov 15	1350	
TOLT RIVER		R.M. 23.0	GAGE 12.1485.00
Ecology (Normal Year)	Sep 15	120	90
	Oct 1	190	
	Oct 15	280	
(Critical Year)	Sep 15	120	75
	Oct 15	190	
City of Seattle (Critical Year)	Sep 15	86	59
	Sep 16	135	
Fisheries (Salmon) Optimum	Sep 1	120	100
	Sep 15	450	
Game (Steelhead) Optimum	Sep 1	120	100
	Sep 15	360	

Footnote: 100 percent refers to optimum conditions for fish spawning, i.e., the maximum habitat per unit of water.

that no excess water will be available for diversion. This will have a profound effect upon consumptive water uses which seek to operate within the Snohomish River Basin. Agricultural irrigation, power generation, and municipal and industrial water supply will be the most affected.

Hydroelectric power generation may be developed on several drainages within the Snohomish River Basin, including the Sultan, Tolt, and North Fork Snoqualmie rivers. Planning is currently underway to develop water supply sources in two drainages of the Snohomish River Basin, the North Fork Snoqualmie River, and the North Fork Tolt River.

The determination of instream flows can be considered as one element of the Snohomish River Basin Resource Management Program (the Level B intergovernmental plan for the basin.) The outcome of that program and a regional water supply plan for the Seattle Metropolitan area will determine, among other findings, the probable source of future areawide water supply. Impacts on potential water supply sources from the establishment of instream flows in the Snohomish Basin will be discussed in the following technical analysis section. The potential projects now under consideration which may be impacted by this proposal are: 1) the North Fork Tolt River water supply project by the City of Seattle, and 2) the North Fork Snoqualmie Dam, a multipurpose dam included in the Mediated Agreement now being studied by the Corps of Engineers.

Irrigation

Farming is a major economic activity in the Snohomish River Basin. There are currently about 140,000 acres in farmland use in the basin. Though the total acres of farmland have decreased in recent decades, the number of farms has recently increased, indicating a trend toward subdivision of large commercial farms into either small farms or large home sites. The irrigated land in the Snohomish River Basin is not large, approximately 13,000 acres. The majority of the irrigated land is located in the Snohomish Valley, just north of Marysville. The remainder is scattered in the Snohomish, Snoqualmie, Skykomish, and Pilchuck River valleys.

The use of irrigation is dependent on the crops planted and the precipitation actually occurring in a particular water year. Average summer rainfall is less than six inches, indicating a need for irrigation for intensive cropping from June through August. The annual average consumptive use of the irrigated crops is estimated to be about 1.9 acre-feet per acre, or approximately 24,600 acre-feet annual diversion. Some return flow will result in total depletion of about 17,000 acre-feet.

Impact Analysis. An average annual water withdrawal of 20,000 acre-feet should accommodate most new irrigation requirements in the basin. The growth of irrigated farming is expected, roughly, to double by the year 2020, but it is felt that the instream flows established in this regulation will have little impact on future irrigation requirements in the basin. The decreasing size of farm operations, availability of water from the main stem of the Snohomish River, the alternative sources of ground water, and farmyard water recovery through wastewater lagoons provide mitigation to any adverse effects of the regulation.

Energy

There is currently one hydroelectric generating facility in the Snohomish River Basin, the Puget Sound Power and Light plant at Snoqualmie Falls. Other locations and projects have been proposed in the basin. Over 80 sites have been identified as having capability for generating hydroelectric power, three of which are in the project-proposal stage.

The Snohomish County PUD proposes to complete Stage II of its Sultan River Project. The proposal involves raising Culmback Dam and Spada Reservoir and building an eight-mile power tunnel and pipeline to a powerhouse. Installed capacity would be 112 MW with 50 MW average power production.

Seattle City Light is considering adding a hydroelectric plant to the existing water supply dam on the South Fork Tolt River. The estimated generating capacity is 17 MW peak and 16 MW average power. In addition, Seattle City Light is considering possible hydroelectric development on the North Fork Tolt River.

The Corps of Engineers, the City of Bellevue, and others are studying the feasibility of installing electrical generation facilities in conjunction with the proposed North Fork Snoqualmie flood control and water supply dam. The generating capacity of the plant would be 30 MW peak and 7 MW average power.

The Sultan River Project - Stage II - is currently in the license - amendment process. As nonfederal project sponsor, the Snohomish County PUD must seek amendment of an earlier license issued by the Federal Energy Regulatory Commission (FERC). As part of the rules governing operations, the utility will be required to maintain streamflows at a level sufficient for fish propagation. To this end, the departments of Fisheries and Game have been a party to the deliberations on fish flow requirements for the project.

The City of Seattle's proposal for power generation on the Tolt River system is in a preliminary stage. Project configuration will be accomplished with interagency negotiations involving Seattle, the departments of Fisheries, Game, and Ecology and (FERC).

The North Fork Snoqualmie Dam, because it is federally operated, would not require the same permits as the Sultan and Tolt River projects. Regardless, the planning phase will be coordinated with the state departments of Game and Ecology. Flow releases from the dam will be regulated to support the resident trout and whitefish fisheries and compensation will be made for lost fish and wildlife habitat, as well as power generation deficiencies at Snoqualmie Falls.

Impact Analysis. None of the three potential hydroelectric power generation facilities will be specifically regulated by the department. The instream flows set for these projects are the jurisdiction of federal authorities. Even so, the department, in representing the state's interest before federal authorities, has determined recommended flows intended to guide project design and licensing. Other project objectives, such as flood control, could effect the economic

feasibility of these projects, in that flood control storage capacity would be created by releasing water during periods when power demand is not particularly high. Conversely, flood control storage would have to occur during periods when electrical energy demands were high. Instream flow requirements as determined through the licensing procedures could have similar adverse economic impacts.

Water Supply

The Snohomish River Basin is viewed as a likely source of additional municipal and industrial water supply. Currently, the City of Seattle and the City of Everett divert water from the, Tolt River and Sultan River supply systems. The Seattle metropolitan area has a difficult choice in selecting the next increment of municipal and industrial water supply. Potential sources are known to exist in the North Fork Tolt; North Fork Snoqualmie, and Sultan rivers in the Snohomish Basin; the City of Seattle's Cedar River facilities; and the Green River behind Howard Hansen Dam.

In an effort to realize maximum benefits from water resources investments, the Corps of Engineers has initiated a Regional Water Supply Study. Parties to the study include the City of Seattle, suburban and east central King County communities, the State Department of Ecology, and King County. Among the objectives of the study was a determination of demand and supply sources. The cost of water supplied from the North Fork Snoqualmie Dam, a component of the Snohomish River Mediated Agreement, was compared to the cost of water supply from the Cedar River and other sources. The Regional Water Supply Study will assess potential yields and forecasted needs; the cost of building large and possibly underutilized facilities; and whether any project can meet economic, environmental, and political feasibility criteria.

The Snohomish River Instream Resources Protection Program will set flow levels for all periods of the year for the major tributaries of the basin. Streams affected by future permitted water diversion systems will be similarly managed to maintain certain specified streamflow levels. No new requirements to release stored water to supplement natural low-flows are proposed at this time. Flow through of inflow to reservoirs during low-flow periods will have a detrimental effect on the potential municipal and industrial water supply yields available in the basin. Over 40 applications for domestic-municipal water appropriation in the Snohomish River Basin have been registered with the Department of Ecology. The cities of Seattle, Everett, and Bellevue; King County Water Districts Nos. 117 and 119; and Snohomish County PUD No. 1 have surface water and reservoir applications, permits, or certificates in the Snohomish River Basin.

Sources. The municipal and industrial water supply sources affected by this regulation are the Tolt River system, the proposed North Fork Snoqualmie Dam and the Sultan River project. The impact analysis will not consider the Sultan project in that the available water supply surplus comes from existing excess storage capacity and could be used for Metropolitan-Seattle water supply. The proposed Sultan Project II will operate under conditions imposed by the FERC regulations with state departmental recommendations.

The North Fork Tolt project, without power generation, will not require a storage dam but would divert streamflow to existing facilities on the South Fork. Available yield is currently disputed in that the City of Seattle claims a right to reduce low-flow up to an additional 30 percent during critical low-flow periods on both the South and North Fork Tolt. This flow regime for the North Fork Tolt River is not agreeable to the Department of Ecology, which proposes new flow regimes incorporating higher flows in this regulation, also encompassing a critical year provision. Available yield is held to be 66 MGD by the City of Seattle from the North Fork under the disputed 1956 agreement and an additional 4 MGD surplus supply from the South Fork.

The North Fork Snoqualmie River Multipurpose Project proposed by the Mediated Agreement attributes over half the total estimated project benefits to water supply. A critical flow determination will be made on this project, as well. Several project configurations have been proposed. A dam with diversion at the reservoir and reduced instream flow requirements for critical years will be assumed for the purposes of this impact assessment. The project could supply 90 MGD of water.

Impact Analysis. Firm water supply yield estimates are based upon the amount of water available to meet maximum monthly demands after meeting the instream flows during a critical runoff year. For water supply yield analysis, a critical year is defined as the period in which streamflows or reservoir levels approach those reached in the driest years of record between the years 1928 and 1978. That would also be referred to as the "one in fifty years" flow. In most years, there will be more water instream than is required for M & I water supply and instream needs.

The Snohomish River Basin instream flows adopted in Chapter 173-507-020(2) WAC are shown in Table 5. Normal and critical year flows are shown for 15-day periods. Daily instream flow requirements can be determined by consulting the instream flow hydrographs shown in Figure 4 of the accompanying Program Document.

Table 5. Snohomish River Basin Instream Flows (cfs)*

Month	Day	Tolt River (Normal Year)	Tolt River (Critical Yr.)	N.F. Snoqualmie (Normal Year)	N.F. Snoqualmie (Critical Year)
January	1	280	190	260	200
	15	280	190	260	200
February	1	280	190	260	200
	15	280	190	260	200
March	1	280	190	260	200
	15	280	190	260	200
April	1	280	190	300	200
	15	280	190	300	200
May	1	280	190	300	200
	15	280	190	300	200
June	1	280	190	300	200
	15	280	165	300	200
July	1	280	140	300	200
	15	240	120	195	140
August	1	170	120	130	100
	15	120	120	130	100
September	1	120	120	130	100
	15	120	120	130	100
October	1	190	185	130	130
	15	280	190	165	165
November	1	280	190	210	200
	15	280	190	260	200
December	1	280	190	260	200
	15	280	190	260	200

*Proposed for adoption under Chapter 173-507 WAC.

The amount of water available for M & I water supply is dependent upon the amount available under critical year provisions because M & I project yields for firm water supply are based on yields from "1 in 50" low runoff conditions. In most years, the water availability will allow maintenance of normal year instream flows. With the critical year flow proposed by the department, water supply yields can remain near normal. Table 6 displays the municipal and industrial water supply yields available from the North Fork Tolt River and the North Fork Snoqualmie River under the proposed instream flows regulations.

Table 6. Water Supply Availability – Snohomish River Basin

Alternative Water Supply System	Firm Yield (MGD)	
North Fork Snoqualmie River		
Multipurpose storage – diversion at reservoir and reduced instream flow requirements for critical yeas.	90	Preliminary; June 1979
North Fork Tolt River		
Reduced 1956 instream flow requirements (with 30% reduction)	66	Not authorized by DOE
Reduced June 1979 instream flow requirements (critical year)	38	Preliminary; March 1979
Reduced June 1979 instream flow requirements (critical year) operated in conjunction with South Fork Reservoir	52	Subject to water right provisions

The preliminary draft regulations circulated in March 1979 to the Ad Hoc Water Supply group, from which water supply yields were determined, did not reflect these slightly more stringent conditions. Because the yield analysis anticipates continued withdrawal during critical years, the available water supply is held near that available under normal conditions. This provision and storage capacity allow mitigation of nearly all adverse impacts to municipal water supply. The yield analysis performed by the Corps of Engineers for the Regional Water Supply Plan is not appreciably affected by the instream flows herein proposed for adoption. Feasibility of municipal water supply and other multipurpose projects in the Snohomish River Basin remains as reported in the Regional Water Supply Study (COE, April 20, 1979).

ALTERNATIVES AND MITIGATION

Alternative approaches to the Western Washington Instream Resources Protection Program were discussed in the final overall programmatic EIS (available from DOE, June 1979). They were described as: 1) existing source limitations, 2) use Cedar model minimum flow technique, and 3) do complete basin plans, or 4) establish instream flows.

Surface Water Source Limitations

This option defines the existing situation in which all action is predicated upon the permit review process. Management flexibility is limited to either placing individual limitations upon permits or administratively closing the subbasin to further appropriation. The individual low-flow restrictions placed on permits do not provide for systematic flow regulation for the stream as a whole, rather it provides flow levels for a particular water permit application. Individual provisions leave unclear the flow levels throughout the whole stream system, particularly in the main stem. Small tributaries would be analyzed in depth once an application is submitted for appropriation. Potential differences between regional management of water rights in the department and organizational goals for the Western Washington Instream Resources Protection Program could be accentuated through the no action option.

Minimum Flows

The only minimum flow set has been on the Cedar River Basin. The method was patterned after adjudications procedures used to resolve and determine water rights. At least for the Cedar River example, a great deal of time and effort was required to arrive at the minimum flow levels. Chapter 90.22 RCW (minimum flow) is silent on methods to be used in determining flows.

Basin Programs

The department has in the past committed resources to basin water resources management programs. In Western Washington, the Chehalis River Basin was completed and will not be part of the instream resources protection program. Basin programs have several planning steps, only one of which is establishing instream flows, which are unnecessary from the point of the instream resources protection program. Should the department attempt to produce total basin plans, the time to complete the project would have extended many more times, possibly leading to over allocation in the interim period.

Instream Flows

The decision of the department to proceed with the proposed method of establishing instream flows is based on its own research, the multiple-use approach to water resources management, and the short-term nature of the planning program. Each instream flow program will be accomplished in a six-month (approximate), overlapping scheme. During that period, hydrographs of historical stream flow are generated and the basin instream resources are surveyed. Significant input was received from the departments of Fisheries and Game and other program participants. The level of protection selected is based on the relative significance of the instream resources. Publication of the program document and regulation culminate the planning process.

In selecting the instream flow approach, the department has been careful to develop an adequate control network in the basin. The 10 stations in the Snohomish Basin monitor the major rivers and tributaries and anticipate major development projects on some of the streams. Further extension of the control network can be accomplished upon signaling by the water rights administrators or departments of Fisheries and Game personnel that a serious water depletion could occur on a particular stream as a result of proposed withdrawals.

The department's position of utilizing a hydrologically based instream flow determination process has been reviewed by the departments of Fisheries and Game. It is understood that the method produces flows different from those derived by the joint U.S. Geological Survey and departments of Fisheries and Game habitat-based methodology or other habitat-based methodologies. The department stresses the need to accommodate various instream flow uses and finds that the proposed flows adequately provide for the spawning and rearing of migratory and resident fish. The departments of Fisheries and Game flow recommendations for maximum potential fish production are published in the program document for use in further refining the control system.

UNAVOIDABLE ADVERSE IMPACTS

The Snohomish Instream Resources Protection Program will cause unavoidable adverse impacts to the availability of water resources for consumptive uses by conditioning all such future uses. The programs could also hamper fish production if the basin instream flows be set too low during crucial spawning and rearing periods. The adverse impact of the regulations on out-of-stream diversions could affect the economic feasibility of projects intended to supply municipal and industrial water, generate hydroelectric power, and irrigate farmlands. Though mitigative measures may be available for these development projects, the added costs involved may terminate interest in the completion of some projects or influence development of alternative projects.

THE RELATIONSHIP BETWEEN SHORT-TERM USES OF MAN'S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY-IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

The program provides permanent protection for instream resources by setting flows below which no future out-of-stream use of water for municipal and industrial water supply; mining and extraction; irrigation; and, to some extent, hydroelectric power generation will be curtailed during periods of naturally occurring low flows. Instream resources, such as fisheries, recreation, water quality, wildlife, and game will enjoy long-term benefits from the regulatory program, through the provision of instream flows.

In the Snohomish River Basin Instream Resources Protection Program, the analysis of appropriate flows considered effects on instream resources, as well as impacts to out-of-stream uses. The program seeks to balance short-term uses with long-range productivity by selecting tolerable levels of protection and commensurable levels of resource utilization.

APPENDIX I

Documents Incorporated by Reference

The following documents are incorporated by reference and are to be considered part of this EIS.

Washington State Department of Ecology, April, 1979. Draft Environmental Impact Statement and Program Document. Western Washington Instream Resources Protection Program.

Washington State Department of Ecology, June, 1979. Water Resources Information System, Bibliographic file for Snohomish Water Resources Inventory Area WRIA 07.

Washington State Department of Ecology, January, 1974. Whitewater Stream Inventory and Streamflow Suitability for Whitewater Canoeing and Kayaking. Gilbert C. Bortleson in cooperation with Washington State Department of Ecology, Olympia, WA.

APPENDIX II

Distribution List

State Agencies

Washington State Ecological Commission
Department of Natural Resources
Department of Social and Health Services
Department of Game
Department of Fisheries
Department of Agriculture
Department of Commerce and Economic Development
State Energy Office
Utilities and Transportation Commission
Planning and Community Affairs Agency
Governor's Office of Financial Management
Parks and Recreation Commission
Interagency Commission for Outdoor Recreation
Department of Transportation
Oceanographic Commission
Energy Facility Site Evaluation Council
State Conservation Commission

Local Agencies

King County
Snohomish County
City of Seattle
City of Bellevue
City of Everett
City of North Bend
Town of Snoqualmie
Town of Carnation
Town of Duvall
City of Redmond
City of Monroe
City of Snohomish
City of Marysville
City of Mountlake Terrace
City of Lynnwood
City of Mukilteo
Town of Lake Stevens
Town of Index
Town of Sultan
Town of Gold Bar
Town of Skykomish

Local Agencies (continued)

Tulalip Tribes, Inc.
Port of Everett
Municipality of Metropolitan Seattle
Snohomish County Metropolitan Municipal Corporation
Basin Coordinating Council
Puget Sound Council of Governments
Snohomish County Extension Service
Snohomish County Conservation District
King County Extension Service
King County Conservation District
City of Seattle Lighting Department
Snohomish Public Utility District #1
King County Water Districts
Washington Association of Water Districts
Washington State Association of Counties
Association of Washington Cities

Federal Agencies

U. S. Forest Service
Fish and Wildlife Service
Corps of Engineers
U.S. Geological Survey
Pacific Northwest River Basins Commission
Bonneville Power Administration
National Marine Fisheries Service
Federal Energy Regulatory Commission
U.S. Soil Conservation Service
Environmental Protection Agency
Department of Energy
Heritage Conservation and Recreation Service
National Oceanic and Atmospheric Administration
Agricultural Stabilization and Conservation Service

Public Groups and Individuals

Audubon Society
Washington Environmental Council
Friends of the Earth
Nature Conservancy
Sierra Club
Pacific Northwest Waterways Association
Washington PUD Association
Puget Sound Power and Light
Sultan Electric Co.
Scott Paper Co.

Public Groups and Individuals (continued)

Weyerhaeuser Co.
Steelhead Trout Club of Washington
Washington State Sportsmen's Council
Purse Seine Vessel Owners Association
Washington Kayak Club
University of Washington College of Fisheries
Norman Associates
Fisheries Research Institute
Robinson & Noble
NUS Corporation
Bellevue-American
Seattle Master Builders Association
Lynnwood Enterprise
Bechtel, Inc.
R. W. Beck Co.
Evergreen Legal Services - Native American Project

APPENDIX C

COMMENTS

The following are the comments received on the draft EIS and program document. Corrections and additions have been made to the documents where we feel it is appropriate, while other comment responses have been provided in Appendix D.

Comments were received from the following:

	<u>Page</u>
1 – Department of Fisheries	D/2
2 – Department of Fisheries (Hearings Testimony)	D/2
3 – Department of Game	D/2
4 – Department of Game (Environmental Affairs)	D/3 – D/4
5 – Washington State Parks and Recreation Commission	D/5
6 – Department of Transportation	D/5
7 – U.S. Environmental Protection Agency	D/6
8 – U.S. Department of Commerce (NOAA)	D/6
9 – City of Seattle	D/6 - D/14
10 – Washington State Association of Water Districts	D/14 - D/15
11 – King County Water District No. 42	D/15
12 – King County Water District No. 20	D/15 - D/16
13 – City of Everett	D/16
14 – Snohomish County PUD No. 1	D/16 - D/17
15 – The Tulalip Indian Tribe	D/17
16 – Vera Heavens	D/17
17 – Roy G. Metzgar, Snohomish River Basin Level B Study	D/17 - D/18
18 – Tolt River Steelheaders	



STATE OF
Washington

Dixie Lee Ray
Governor

DEPARTMENT OF FISHERIES
115 General Administration Building, Olympia Washington 98504 206 753-6000

August 2, 1979

Mr. Eugene Wallace, Division Supervisor
Water Resources Management
Department of Ecology
St. Martin's Campus
Lacey, Washington

Dear Mr. Wallace:

The Department of Fisheries has reviewed your Draft Snohomish River Basin Instream Resources Protection Program and Supplemental EIS and offer the following comments.

We have worked closely with the Departments of Game and Ecology on the Snohomish River Instream Resources Protection Program and the establishment of these proposed flows for the protection of fishery resources under our jurisdiction. The department presented a statement at your Public Hearing in Monroe, Washington on July 19, 1979 concurring with the flows as outlined in the Draft EIS.

1. Program Document

A. Page 4, INSTREAM RESOURCES, Fisheries

Salmon Production is summarized in the first paragraph of this section indicating the largest runs and highest value are for pink, coho and chinook salmon. Chum salmon also have potentially high values as demonstrated by historical records of large escapements into the stream.

B. Page 19, STREAM REACHES WITHOUT SPECIFIC INSTREAM FLOW FIGURES

We appreciate the expression of concern over future diversions from small streams and tributaries. We urge the development and prompt implementation of the referenced automatic review process whereby the tributaries will be protected. This process is critical to the maintenance of spawning and rearing throughout the watershed.

C. Page 20, Table 4.

We appreciate the inclusion of Provisional Instream Flow recommendations made by the Departments of Game and Fisheries for the smaller tributaries without control stations. These smaller streams support the majority of the coho salmon spawning and rearing in the Basin and, in addition, also support substantial runs of pink, chum and/or chinook salmon.

Mr. Eugene Wallace

- 2 -

August 2, 1979

1. Supplemental EIS, Page 5, Table 2 and Page 6, Impact Analysis

A. Potential salmon production is shown and discussed in this section. These potential figures assume the best instream flows possible for fish production. It should not be misunderstood that the recommended base flows would allow this potential to ever be reached, since this is highly unlikely.

B. Page 8, Paragraph 3

The timing described for spawning and rearing is in error. Chinook salmon spawning extends from late September through October, and a similar timing applies to pink salmon. Coho and chum spawning takes place predominantly from late November through the early part of January. Chinook rear during spring months, while coho rear in all accessible reaches of the basin throughout the year. Spawning conditions for pink and chinook, during late September and October preceding normal winter precipitation, would most likely be impacted by low flows. Low summer and early fall flows during coho rearing are the limiting factor for production of this species.

We have appreciated the opportunity to participate in this program and to express our views on your document.

Sincerely,

Gordon Sandison for
Gordon Sandison, Director
DEPARTMENT OF FISHERIES

kn

cc Game



STATE OF
Washington

Dixie Lee Ray
Governor

DEPARTMENT OF FISHERIES
115 General Administration Building, Olympia Washington 98504 206 753-6000

Statement of the Washington Department of Fisheries
before the

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Snohomish River Basin
Instream Resources Protection Program
Including
Proposed Administrative Rules, and Draft
Supplemental Environmental Impact Statement
(Water Resource Inventory Area 7)

Monroe, Washington
July 19, 1979

The Washington Department of Fisheries appreciates the opportunity to express its views on the Department of Ecology's Snohomish River Basin Instream Resources Protection Program.

It is well known that the Snohomish Basin is one of the major salmon producing areas of Puget Sound. In order to fulfill increasing demands for salmon by Indian and non-Indian commercial fishermen, sports fishermen, and the general public, it is necessary to maintain the production of naturally produced salmon. Existing levels of natural production will continue to be threatened by ever-increasing demand for the water resource. We do not anticipate that population and industrial growth will abate, especially in the Puget Sound region. Once over appropriated, there is no way to replenish water in the stream. Therefore, base flows must be established in order to maintain present levels of salmon production in Western Washington.

The Department has worked closely with the Departments of Game and Ecology to establish these proposed flows for the protection of the fishery resources under our jurisdiction. To this end, our department in cooperation with the other involved fishery agencies has made extensive instream flow measurements in the Snohomish Basin.

The Department in cooperation with the U.S. Geological Service has developed methodology for determining flows that would provide protection for the fishery resources. In addition we have also reviewed actual salmon spawning populations occurring on specific dates and flow regimes within the basin. This review included spawner distribution and density in relation to stream flow throughout the heaviest utilized areas.

By the combined use of these techniques we are satisfied that the flow measurements as outlined in the Draft EIS will provide for the protection of the salmon resource.

There are some specific items in the EIS that we would like to comment on. We appreciate the inclusion of the Department of Fisheries and Game's provisional instream flow recommendations for the smaller tributaries (without control stations). These smaller tributaries support the majority of the coho salmon spawning and rearing in the basin and in addition some of the streams listed in Table 4 also support substantial runs of pink, chum and/or chinook salmon.

7 We urge DOE to develop and implement the automatic review process whereby the tributaries will be protected. We believe this review process is critical to the maintenance of spawning and rearing throughout the watershed.

8 The instream flows as shown for the Tolt River are needed for protection to the fisheries resources. We recognize the need of the City of Seattle for additional M A I water supply and believe that these base flows offer the needed resource protection while allowing for some additional M & I water diversion.

In summary the Department of Fisheries concurs with the flows as outlined in the Draft EIS and urges their adoption.



STATE OF
WASHINGTON

Dixie Lee Ray
Governor

DEPARTMENT OF GAME

Seattle Regional Office – 600 Fairview Avenue North, Seattle 98100 Telephone 406-7704

July 31, 1979

Eugene Wallace, Division Supervisor
Water Resources Management
Department of Ecology
Olympia, Washington 98504

Snohomish River Basin Instream Resources Protection Program, Proposed Administrative Rules and Supplemental EIS.

Dear Mr. Wallace:

We appreciate the opportunity to comment on your Instream Resources Protection Program document for Snohomish River Basin. Preservation of stream flows is an essential part of basin management to protect fish and wildlife resources. These resources have great social and economic value. We see the effective implementation of base flows as an important first step in this endeavor. To this end we encourage their adoption.

9 There are aspects of the overall program; however, that trouble us. As we have stated before, we question the expressed concept of water rights then being issued with flow provisos. We see no indication that there would be any limit to the issuance of such diversion permits. While in principle this may appear to allow protection of base flows, there may be serious practical and legal problems with administration of such a program. How could or would closure to further diversions ever be implemented?

10 To preserve instream values and uses, will not only require flows that are present at relatively high percentage of the time but may also require flows present less frequently. Examples are those necessary for flushing sediments from stream gravels and even maintenance of desirable basic stream channel characteristics. The proposed base flows way require modification to reflect these needs.

11 The fundamental accomplishment of effective base flows will be to preserve instream values. Though the word is often used, benefits will require steps beyond a program that just sets minimum flows.

We agree that small streams are particularly vulnerable (page 4). The proposed program could be an important step to protect these resources but we would like to see a more specific
12 description of how proposed diversions will be treated. Who will keep track of them? What threshold levels to trigger administrative action will be used? This is critical to protection of streams not covered by this regulation.

We are pleased to see our recommendations for many smaller basin streams listed In Table 4. It should be remembered, however, that this list

Eugene Wallace

Page 2

July 31, 1979

13 in not exhaustive. There are many more important tributaries not listed. We noticed some errors in some of the flows listed in Table 4. Corrections are listed in an attachment to these comments.

14 It should be clearly pointed out that flows proposed for North Fork Snoqualmie are provisional and subject to change based on results of our ongoing studies in connection with the Snohomish Mediated Plan. We are pleased to see base flow recommendations for the North Fork Tolt River in view of proposed further developments by the City of Seattle for water supply diversion.

Regulation Section

15 We would appreciate a definition of circumstances under which critical conditions would be declared, and further, when lower then critical year flows would be used. Substantial damage to instream values could occur long before flows reach critical levels. And there needs to be provisions for equitable sharing of the burden in water deficient years. Instream resources represent great economic value--livelhoods and Industries are based on these assets. Diversion interests should demonstrate effective conservation of use and control of demand before instream resources are compromised by flow cutbacks.

16 In addition to streams listed, we recommend the following streams be added to those identified for closure: Tokul Creek, Cherry Creek, Stossel Creek, French Creek and Tate Creek. All of these streams are, in our view, at or near critical levels, all or part of the year.

Supplemental EIS

17 The proposed regulations will not protect all flows from further deterioration. They will protect only a portion of the present total. For game fish, summer flows to sustain instream rearing potential are often the more critical and severely limiting than spawning.

18 Table 2 does not show values for game fish production and related economic return In Snohomish Basin. These would add substantially to total value. Unfortunately, we are not in a position to assemble these data to include here.

19 While proposed base flows may permit improvement of fish production with intensive management, options and opportunities may be restricted. In plentiful water years, fish production is often naturally enhanced. Peak returns of steelhead and coho salmon are often associated with better than average flows during the time of juvenile freshwater residence. To the extent that allowed diversion cut back or eliminate better than average flows through appropriation or storage, production will be reduced (page 6).

Perhaps for "purposes of discussion" (page 6), one could assume water quality, temperature and food supply are constant. But in real life



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DEPARTMENT OF GAME

Seattle Regional Office - 600 Fairview Avenue North, Seattle 98100 Telephone 406-7704

July 23, 1979

20 these factors can vary tremendously with flow level. Substrate is not fixed when compared to flow. Gravels suitable for spawning are often concentrated toward the margins of stream channels. The higher velocities in mid-channel leave course, often unspawnable substrate there. Consequently, spawning habitats can be quickly rendered unusable or dewatered entirely by reduced flow. This problem is made more severe when fish such as steelhead are considered. Steelhead preferentially select areas of suitable gravel, depth and velocity that are close to stream side vegetation and shade cover, often immediately adjacent to the shoreline.

21 Table 3 should include steelhead spawning criteria as reflected in USGS Open-file Report 75-155, C.H. Swift, 1976.

22 Table 4 does not correctly show steelhead spawning season. Peak of spawning for winter-run steelhead occurs April through May.

It is important to make the distinction that steelhead and most often game fish are usually most severely limited by summer flow.

We hope these comments will be helpful in preparation of your final documents.

Yours truly,

THE DEPARTMENT OF GAME

R. Gary Engman
Wildlife Project Leader

RGE:dg

cc: Hearings Examiner - This Proceeding

Mr. Eugene Wallace
Division Supervisor
Water Resource Management
Department of Ecology
(Mail Stop PV-11)

ENVIRONMENTAL IMPACT STATEMENT:

Snohomish River Basin Instream
Resource Program - Snohomish County
Supplemental Draft

Mr. Wallace:

Your document was reviewed by our staff as requested; our comments follow.

23 We commend you on your efforts to protect the level of instream water flows to lessen impacts on wildlife. However, there is a need to establish base flows at high enough levels to prevent over appropriation during drought years. We feel the instream flow levels recommended by the Department of Fisheries should be the standard adopted by your department. The following are specific comments on the Instream Resources Program EIS:

24 Page II - Environmental Resources: Although the establishment of instream levels will either enhance or impact the fisheries within the basin, it will also have an affect on existing and future riparian habitat and related wildlife. This is particularly true in the lower reaches of the Snohomish, which encompasses a large valuable estuary. Your document does not discuss wetlands and associated wild- life values. Also, other native fish species, excluding steelhead, are not mentioned. Brook trout, rainbow, sea-run cutthroat and native cutthroat occur within the drainage basin.

25 Page VI, Paragraph IV - How will the proposed flows improve fish production over present levels? Your recommends(minimum flows do not display a high degree of instream resource protection for spawning as indicated in the EIS supplement.



STATE OF
WASHINGTON
Dixie Lee Ray
Governor

WASHINGTON STATE PARKS AND RECREATION COMMISSION
7150 Cleanwater Lane, Olympia, Washington 98504 Mail Stop KY-11 206 753-5726

July 26, 1979

26 Page VII, Table IV - Instream Flow Impacts. Is there other streams of significance within the Snohomish Basin that should be compared for optimum flow? How about measurements of flows at other gauging stations on the Snoqualmie and North Fork of the Skykomish?

27 Page XV, Paragraph 11 - How will the flow recommendations made by the Departments of Fisheries and Game be used to further refine control systems? It would seem that the minimum suggested by the Departments should be the minimum as established by law and not be used as an emergency measure when the impacts will have already occurred.

28 As a final comment we question the adequacy of the supplement EIS, since base flows proposed in the draft EIS could result in serious impacts in any of the drainage basin areas.

Thank you for the opportunity to review your document. We hope you find our comments helpful.

Sincerely,

THE DEPARTMENT OF GAME


Larry McCallum, Applied Ecologist
Environmental Affairs
Habitat Management Division

Lm:mjf

cc: Agencies

Elmer Vogel, Deputy Director
Department of Ecology
Olympia, Washington 98504

Ref: Surface Water Source Limitations and
Instream Flow Regulations for Snohomish
WRIA No. 7

Dear Mr. Vogel:

29 The impacts or value of the proposed minimum stream flows for the Snohomish River Basin are difficult to assess. The criteria for determining the value of each stream or river and the subsequent minimum flows is lacking in any scientific procedure and therefore several problems exist. The basis for classifying or determining the value of each stream is highly subjective and arbitrary. A good recreation index is lacking in determining the recreational value of a stream. Also, it is unclear how the stream classification relates to the actual base flow chosen.

It is my opinion that the currently proposed minimum flow limitations for the Snohomish River Basin may be inaccurate and of little value in managing the resources of this basin.

Sincerely,


David W. Heiser, E.P., Chief
Environmental Coordination

er



STATE OF
Washington

Dixie Lee Ray
Governor

DEPARTMENT OF TRANSPORTATION
Highway Administration Building, Olympia, Washington 98504 206/753-6006



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION X

1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

July 13, 1979

Department of Ecology, PV-11
Olympia, Washington 98504

Washington State Department of Ecology
Snohomish River Basin Instream Resources
Protection Program
Supplemental Draft Environmental Impact
Statement

We have reviewed the subject document and have no comments to offer regarding the proposal.

Thank you for the opportunity to review this Information.

Sincerely,

ROBERT S. NIELSEN
Assistant Secretary
Public Transportation and Planning

By: WM. P. ALBOHN
Environmental Planner

30

RSN:mt
WPA/WBH

cc: J. D. Zirkle
R. Albert
Environmental Section

John F. Spencer
Assistant Director, Office of Water Programs
State of Washington Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504

Dear Mr. Spencer:

We have completed our review of the draft Snohomish River Basin Instream Resources Protection Program and draft Supplemental Environmental Impact Statement. We have the following comments for your consideration.

The document should include more information on existing and future water quality. This should include a description of the state water quality standards, past violations and an assessment of how these proposals might help achieve these standards.

We support the concept mentioned on page 19 that an automatic review of proposed diversion be ordered after certain threshold quantities of water has been diverted on those stream reaches without specific instream flow figures.

We appreciate this opportunity to comment on this document.

Sincerely,

Alexandra B. Smith, Chief
Environmental Evaluation Branch

31



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Environmental & Technical Services Division
P.O. Box 4332, Portland, Oregon 97208

July 31, 1979

FNWS:JRL

Mr. John F. Spencer
Assistant Director, Office of Water Programs
State of Washington
Department of Ecology
Olympia, WA 98504

Dear Mr. Spencer:

Thank you for sending us your proposed Snohomish River Basin Instream Resources Protection Program and draft Supplemental Environmental Impact Statement. We reviewed the documents and have the following comments for your consideration.

We are pleased that Department of Ecology is planning to adopt administrative rules which establish instream flows for streams in the Snohomish River Basin. At this time we concur with the recommended flows and view the proposed program as an Important beginning that can provide necessary protection for the important aquatic resources in the Snohomish Basin. Our win concerns include the following:

- 32** 1. The Issuance of conditional water rights after adoption of the administrative rules will require careful and complete monitoring and enforcement to insure that instream flow levels are not being violated. There is no indication in the document that Increased funding and efforts by DOE for monitoring and enforcement will occur.
- 33** 2. Instream flow levels based upon natural flows and administrative rules are also subject to administrative changes through local political pressure. If exceptions are requested by consumptive users of the water, these users should bear the complete burden of proof that a requested exception is fully warranted. An exception should only be considered for critical purposes such as human uses, livestock watering, etc., and all possible conservation means should be utilized. In addition, a public hearing should be held during the consideration of an exception request to provide an opportunity for all issues to be fully examined.



2

- 34** 3. If the Corps of Engineers proposed North Fork Snoqualmie Dam is constructed, stored water rights for instream purposes should be allowed. An authorizing document for the proposed project should clearly indicate this and establish a specific deadline for issuing the water right.

Thank you for your continuing cooperation

Sincerely yours,


Dale R. Ewins
Division Chief

cc: Washington Dept. of Fisheries
Washington Dept. of Game
Fish and Wildlife Service, ES, Olympia

Office Of The Mayor
City of Seattle

Charles Royer, Mayor

July 30, 1979

Wilber G. Hallauer, Director
Department of Ecology
St. Martin's College
Olympia, WA 99504

RE: Comments an Instream Resources Protection
Program and DEIS for the Snohomish River Basin

Dear Mr. Hallauer:

We have reviewed the material you have presented for the set- ting of instream flows in the Snohomish River Basin. It in our understanding that your proposed action, set forth in the form of proposed Regulation WAC 173-507, is to establish 11 separate minimum stream levels at various points throughout the Snohomish Basin. In support of this action, you have presented a general programmatic EIS for the overall Western Washington Instream Resources Protection Program, a Basin Document, and a draft supplemental EIS for the Snohomish basin. All of these documents must be considered as a total package with regard to the Snohomish Basin and our comments are address to all of this material as a whole. The material presented in that package does not adequately support or justify your proposed actions, particularly with respect to the Tolt River.

Our position is summarized as follows:

- 35**
- o We can find no justification for changing the existing minimum flows on the Tolt River. These flows were negotiated with the Departments of Fisheries and Game in the early 1950's and were made a part of the water permit for our South Fork Reservoir project. To date, we have received no indication from either of these agencies that the existing minimum flows are inadequate or in any way harmful to the existing fishery.

Wilber G. Hallauer, Department of Ecology
Comments on Instream Resources Protection
Program and DEIS for the Snohomish River Basin
July 30, 1979
Page 2

- 36** o The methodology used to determine the proposed instream flows is completely insufficient and improper for a stream like the Tolt River. It is poorly documented and considers only certain instream uses without due consideration for other instream uses or out-of-stream uses such as energy production and water supply.
- 37** o The EIS material presented in support of your proposed action is totally inadequate. It does not follow the intent of SEPA; it is vague and does not directly or fully address many critical environmental issues; and it does not present alternative flows that could accomplish the same objective. In addition, the format (using several different documents without sufficient cross-referencing) in extremely confusing. A great number of significant omissions are evident throughout all of the documents.
- 38** o Your proposed action was decided without sufficient regard for the guidelines and intent of the Water Resources Act of 1971. Your program appears to give priority to the establishment of instream flows without regard to other beneficial uses of the water. Further, there is no evidence that you have considered the maximizing of net benefits to the region as provided in this act. No material was presented to indicate that all parties who would be affected by the establishment of these instream flows were in fact, actively involved in the determination of the flows.
- 39** o The proposed instream flow requirements for Tolt violate the City's existing water right on the South Fork of the Tolt River.

Before responding in detail to your proposed action it appears necessary that some background information be provided as to the nature and extent of our Tolt River Project. The development of the Tolt River system for M & I water supply for the Seattle Metropolitan Area was not conceived in the very recent past. Rather, it has been a slow, ongoing developmental process that began in the early 1930's and has proceeded in an orderly fashion to the present.

On February 6, 1935, the Board of public Works was authorized to prepare a feasibility study for delivery of water to the north end of the City and adjacent areas outside of the City, and the areas east of Lake Washington. In 1936, a document entitled, "Preliminary Report on Additional Water Supply", by Langloe A Carver, made recommendations regarding water rights and reservoir construction rights focusing on the North and South Forks of the Tolt River. Applications for water rights on both forks of the river were made at that time.

40 As time progressed and the demand for water in the Seattle Metropolitan area increased, the plans for development of the Tolt system began to take shape. By June 1957, when the "Tolt River Water Supply Design Studies" were issued, all the various proposals had now jelled into the final Tolt Project concept. This project consisted of a North Fork run-of-the-river diversion and pipeline and a storage reservoir and diversion on the South Fork of the Tolt. For optimum operation, the facilities on the two forks would be managed and operated together. During periods of higher flow, South Fork flows would be stored and water would be diverted from the North Fork and sent directly to the service area. During low flow periods, when stream- flows on the North Fork dropped below minimums required for downstream uses, no diversion would be taken from the North Fork. Rather, the water which had been stored throughout the year in the South Fork Reservoir would be used for transmission to the City.

In anticipation of this total project, land has been purchased and agreements have been reached with adjoining land owners on both the North and South Forks of the Tolt River.

It was decided to construct the Tolt River project in stages as the demand on the north end of the City and to the east of Lake Washington required additional supply. Since the run-of-the-river diversion could not stand on its own, but required the South Fork Reservoir for support during low flows, it was decided to construct this reservoir first. That portion of the Tolt River Project was completed during 1963. The City's Water Department has tentatively decided to continue with the second phase of the Tolt River Project, the construction of the North Fork diversion and pipeline to the regulating basin so as to have it on line around 1995.

In the early 1950's the City entered into negotiations with the State Departments of Fisheries and Game intending to arrive at some equitable downstream minimum flow rates upon which to base the design and operation of the entire Tolt River Project. Appropriate studies were made by these agencies and the resulting proposed instream flows were accepted by the City's Water Department. As a result, a letter of understanding between the three parties was drafted and agreed to by the City and the State Departments of Fisheries and Game. The South Fork Reservoir has operated under the terms of this agreement since its construction in 1963. As of this date, the City has never been informed by either the Department of Fisheries or Game that there has been any problems with it or that any changes should be made in order to protect or preserve the instream resources.

41 The statements in your DEIS indicate that you are totally disregarding this currently existing agreement. We ask that you fully substantiate your reasons for disregarding this agreement.

42 The methodology employed by your department to determine the instream flow proposed in the now regulation is improper, poorly documented, and inadequate. As we stated in our comments to your programmatic EIS, the methodology that you employ does not adequately consider the actual needs of the fishery resource nor does it consider other uses of the water, particularly uses such as M & I water supply or energy production.

In determining the instream flows for the Tolt River, you have lowered the proposed instream flow curve below what the methodology would normally produce and have added a well, a "critical year" flow.

43 While we support the concept of a "two curve" approach, in reviewing all the material provided, we were unable to find any explanation as to how the "critical year" flow was developed. Although the proposed regulation states that critical year flows are "flows below which substantial damage to instream values will occur nowhere in the documentation is there evidence to support this claim. We find no information that would lead us to believe your department knows what flows would cause substantial damage, nor do we find information which indicates that substantial damage was the actual reason for the critical year flows.

44 At the recent public meeting held in Monroe, your personnel referred to the proposed 'critical year' flow on the Tolt River as being generally a 1 in 50 year low flow occurrence. The proposed regulation does not state this. We propose that the definition of "critical year" flow contained on page 4 of the proposed regulation be modified to include an expected frequency of occurrence (i.e., one year in 50).

45 In your final programmatic EIS, you have indicated that the flow methodology employing the stream ratings was used as a "first cut". You then indicated that negotiations took place with various instream and out-of-stream users to determine the best flows possible. Specifically with regard to the Tolt River, we find no documentation or evidence of any sort to indicate what was done after the "first cut". You then indicated that negotiations took place with various instream and out-of-stream users to determine the best flows possible. Specifically with regard to the Tolt River, we find no documentation or evidence of any sort to indicate what was done after the "first cut" flows were determined. This material is extremely important in determining the adequacy of the flows you propose.

46 You have stated in your programmatic EIS that existing water rights cannot be affected by this new regulation. Since the Water Department possesses such water diversion and storage rights on the South Fork Tolt for operation of the South Fork Reservoir, the effects of the South Fork Reservoir must be included in determination of your streamflows. The permit for the operation of that reservoir clearly states the minimum flows that are required. Our calculations show that for a number of historic flows (specifically those that occurred in 1938, 1941, and 1952) with only the present South Fork facilities in operation and no diversion of any kind from the North Fork, the critical flow curve that you propose could not be maintained. In other words, the City would have to release water from storage, over and above that required in its water right, in order to meet the proposed instream flows on the Tolt. This casts serious doubt on both the hydrographic data that was used in determining the minimum flow curves and on the actual levels of those curves themselves. This problem must be fully addressed if the flows you propose are to have any credibility at all.

On the one hand you have indicated that normal flows "represent flows that should permit improvement of fish production well over the present levels." On the other hand, you have

47 stated that the critical flow level in that level below which "substantial damage to Instream values will occur." Neither of these statements is substantiated with any backup data or information in the Supplemental DEIS.

48 It is apparent from the material you have presented to substantiate your proposed action, that you have either misinterpreted or totally disregarded several of the fundamentals contained within the Water Resource Act of 1971. To begin with, your proposed action to set instream flows without regard to out-of-stream uses essentially creates a priority for these instream flows over all other uses. We can find nowhere in the 1971 Act, or in your comments, any evidence that any of the uses of the waters of the State of Washington have priority over any of the others. Rather, it is the intent of that Act that all water uses and users be considered on an equal basis before any allocation can be determined. There is no evidence in the material provided that justifies the consideration of instream uses to the detriment of other uses of that water.

48 Throughout the material provided, there are references to "the improvement of fish production well over present levels", "the preservation of fish levels", and the "enhancement" of fish production. There appears to be a conflict with Chapter 90.54.020(3) RCW which states, "The natural environment shall be protected and, where possible, enhanced." We find no documentation that other uses of the water have been investigated, thus allowing your department to make a judgment regarding the possibility of enhancing the fishery resource.

50 Chapter 90.54.020(2) states, "Allocation of waters among potential uses and users shall be based generally on the securing of maximum net benefits for the people of this state." We could find no information anywhere in the documents provided that indicated any assessment had been made regarding the maximization of net benefits. In fact, we can find no documentation that sufficient data had been collected upon which to make this determination. A complete and thorough assessment of net benefits involving both instream and out-of-stream uses of these waters must be made.

51 Page 10 of the Draft EIS states that the North Fork of the Tolt River is mentioned as a possible site for future hydro-electric power generation by the City of Seattle. The specifics of the City's plans are not discussed, and there is no mention of what losses the City will suffer if the proposal is carried out. The North Fork Tolt power project feasibility was determined on the basis of using minimum stream flows agreed upon between the State Fisheries and Game Departments and the Water Department in 1956 at the time of development of the Tolt River water supply project. The adoption of the proposed flows for the North Fork Tolt will have a negative effect on City Light's proposed power development there.

52 Chapter 90.54.060 RCW, is designed to insure that all the various persons and entities having an interest in the water resources of this state will be fully involved in both the development and implementation of programs that are carried out under the authority of this statute. We find no documentation in the material provided to substantiate that this portion of the Water Resources Act has been fully carried out. The City of Seattle has been involved in this process only indirectly and after-the-fact.

53 The Basin EIS and its supplemental material as provided for our review is totally inadequate. To begin with, the document in its totality does not conform with the guidelines of SEPA, particularly in accordance with WAC 197-10-42S(4). This regulation requires that the author of an EIS "keep in mind that the purpose of a draft EIS is to aid decision-makers in considering the significant environmental impacts of their decisions". Even when taken as a total package, the material set forth in support of your proposed action provides little, if any, information or data upon which to base any form of decision.

Further, the material provided is almost totally lacking actual data or summary statements to tie together the many diverse documents that have been presented. SEPA guidelines clearly require specific reference to inventories and data studies which are in support of the information presented.

54 Although the SEPA guidelines allow much more flexibility in an EIS structure for non-project actions, the guidelines still require that the proposal should be presented in a manner which encourages consideration of a number of alternative methods of accomplishing its objective. The material presented has actually only one action (i.e., one flow regime) proposed and no alternative flow are considered. The alternatives listed are actually alternative approaches for the overall Western Washington Instream Resources Protection Program and are not specific alternatives to the setting of instream flows in the Snohomish Basin.

55 The Draft EIS mentions some City plans, but we can find no specific discussion concerning whether the proposal is consistent or inconsistent with these plans. Further, there should be some specific discussion concerning the recently released Comprehensive Plan of the Seattle Water Department. The proposal would seem to conflict with these plans, but the Department of Ecology makes no confirmation or denial of these inconsistencies, as required by WAC 197-10-440(6)(f).

56 Page 2 states that the primary beneficiary of regulation will be instream uses. We urge DOE to exercise the option offered under WAC 197-10-440(13)(c) and undertake a discussion concerning the relationship between the costs of the unavoidable adverse environmental impact, i.e., loss of potential water and power supplies and the expected beneficial environmental impacts which will result from the implementation of the proposed action. Such a discussion should include data regarding increased costs which will be incurred by the utilities, and subsequently passed on to the public, for the more expensive forms of energy which may have to be used if future hydroelectric power expansion is curtailed. In addition, DOE should also discuss whether this proposal will have any long-range effects on the economic growth potential of the Seattle/King County Metropolitan area.

We suggest that DOE be reminded that the benefits of this proposal should be weighed against the impacts which may be suffered by 25%-30% of the state population who are customers of

57 utility services provided by the City of Seattle. Since DOE repeatedly uses the benefits of the proposal throughout the EIS, we feel it is only appropriate that they also show the costs of the proposal so that all relevant data is present as intended by SEPA.

One of the primary reasons we consider the material presented to be totally inadequate is the tremendous number of omissions that we have discovered in our review. Rather than go into any detail on any of these omissions, we will simply list them as follows:

o Table 3 in the Basin document is presented without any explanation of how these specific values were actually determined.

58 o The criteria for the determination of the individual rating values in Table 3 was not found.

o There is no explanation as to why the Tolt River has a relatively high wildlife value.

o There is no explanation of why the Tolt River has a moderate navigational value while the Sultan River has none.

o There is no evidence presented to support the claim of imminent over appropriation in the Basin, specifically in the Tolt River Basin.

o The actual size and composition of the current fishery specifically on the Tolt River is not stated.

59 o No indication of how much instream water is needed to preserve the existing fishery in the Tolt River.

o No explanation is provided regarding how the potential fish production for the entire Basin, and specifically for the Tolt Basin, was found. The current fishery is described as 'depressed', but this status is measured only in relation to this alleged "potential" value.

o You state that the success of this regulatory action will be assessed by its impact on the fishery. No evidence is provided as to how this impact will be measured and what will be the base value.

60 o The specific impacts for each recommended flow level for each river within the Basin were not found. Page 2, paragraph 2, of the DEIS stated each recommended level will have an accompanied group of impacts upon the instream resources and out-of-stream uses of the Basin. These impacts were not found for the Tolt River Basin.

61 o Little or no information was provided with regard to the actual biological needs of the fishery resource. Specifically in the Tolt River Basin, no data is provided with regard to critical stream reaches, physical data on suitability for spawning or rearing, acreage available, species, time of spawning and rearing, and no input of trout information on the upper North Fork Tolt River.

o Table 7 of the DEIS contains no reference indicating where the tabled values originated.

62 o There is no data shown for determining the economic impacts of proposed instream flows on out-of-stream uses.

o Throughout the entire section on Evaluation of Economic Values, there is not one dollar amount stated.

63 o No alternative flows are indicated. The effects of either increasing the proposed minimum flows or decreasing these flows is not stated.

o The Water Supply Economic Values section is extremely vague and generalized, almost totally lacking specific information.

64 o There is no discussion of how much more the one million residents in the Seattle area may have to pay for water supply as a result of the proposed action.

- o There is no explanation of why the impacts to water supply are considered "unavoidable".
- 65 o There is no information as to what reference, what criteria, and what method of measurement has led the Department to the belief that the instream flows provide a "high degree of protection" to the instream resources (page 8, paragraph 4).

In addition, in reviewing the material that was used to determine the proposed instream flows on the Tolt River, we are unable to find any of the following:

- o The actual criteria used in determining the individual stream ratings.
- o The actual hydrographs that were used in the determination of instream flows.
- 66 o Any evidence of how the instream flow hydrographs were finally formulated.
- o Any indication of how those actual hydrographs were deregulated (if in fact they were) to account for the effects of South Fork Tolt Reservoir operations.
- o Any documentation on the origin or formulation of the "transformation curve" that is used to convert the stream ratings to the instream flow hydrographs.

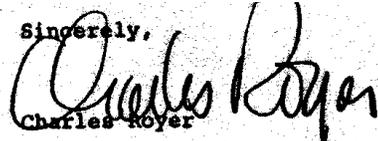
Each of the items in the above list of deficiencies and omissions is significant in determining the adequacy of the analysis and the potential environmental effects. The Department of Ecology should consider delaying any action until these omissions are rectified.

In closing, we make the following recommendations:

- 67 o There should be no change in the instream flow requirements in the Tolt River system.

- 68 o If any action is specifically needed, then that action should be to declare & moratorium on appropriations within the Basin until such time as complete information and an adequate EIS can be provided.
- o Because of the complexity and importance of the Tolt River Basin, a separate detailed supplemental DEIS for the Tolt Basin should be prepared before any instream flows are set in that basin.
- 69
- 70 o We suggest that a joint study (City of Seattle, State Department: of Fisheries, Game, and Ecology) be formed to properly and adequately determine what the minimum instream flows should be in the Tolt Basin.

We hope that your department will fully consider the comments we have just set forth, and will take into consideration the extreme importance of the Tolt River system to the future water supply of the Seattle Metropolitan Area which is projected to have a population of about two million people within the next century.

Sincerely,

Charles Royer

CR:wmc

cc: Colonel Leon K. Moraski, District Engineer
Corps of Engineers
Gordon Sandison, Director
Department of Fisheries
Ralph Larson, Director
Department of Game
Paul Kraabel
Seattle City Council
Kenneth M. Lowthian, Superintendent
Seattle Water Department
Robert Murray, Superintendent
City Light Department
Darel Grothaus, Director
Department of Community Development

washington state association of water districts

suite 112 1818 westlake north seattle, washington 98109 284-5820



July 27, 1979

Wilbur G. Hallauer, Director
Dept. of Ecology
St. Martins College
Olympia, Washington 98504

RE: Review of Instream Resources Protection Program for the Snohomish River Basin.

Dear Mr. Hallauer:

It to our understanding that you propose to set several separate minimum stream flows at various points in the Snohomish basin.

You have presented a general EIS, a Basin Document and a Draft Supplemental EIS for the basin. These must be considered as an entire package.

71

In view of the very short time these documents have been available to the Washington State Association of Water Districts (about five days) and in consideration of the impact these Documents could have on all of the Purveyors now purchasing all or part of their water from the Seattle Water Department, it would seem that much better dissemination of information should be practiced by DOE.

Fundamental to the process of any EIS, is the concept of full disclosure to facilitate public review of the proposal and time to make a determination upon it.

After reading and some discussion of the Documents, we strongly feel that we, as Water Districts, must support the position of the Seattle Water Department, for it follows that what affects the Seattle Water Department also affects us.

The Association represents 32 Purveyors in King County and 64 in the entire State and we use approximately 40% of the water handled by the Seattle Water Department in King County.

To summarize our position and go on the records at this time, we state, again, that we support the Seattle position as follows:

72

There is no apparent justification in changing the existing minimum flows of the Tolt River. These flows were negotiated with the Departments of Fisheries and Game in 1956 and there has been no indication to date that these existing flows are insufficient for the existing fishery.

73

We question the methodology used to determine proposed instream flows. The methodology is inadequate and poorly documented. It does not take into consideration all the factors which should be considered.

The EIS material is confusing. It does not fully address many environmental issues. We fully agree that the concept of preservation of the Ecology is valid. We find nothing in the present or projected use of the Tolt River that endangers fish or wildlife so far as M & I water use is concerned. We refer you to the 1957 "Tolt River Water Supply Design Studies", The Water Resources Act of 1971, Chapter 90.54.020 (3) RCW. Chapter 90.54.020 920 Chapter 197.10.425 940, Sepa and other documents, the intent of which have not been adhered to.

washington state association of water districts

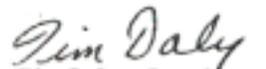
suite 112 1818 westlake north seattle, washington 98109 284-5820

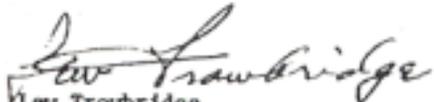


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In conclusion, we would state that the cost of an alternate supply of M & I water to replace that taken away from Seattle's allocation from the Tolt River, will have a tremendous impact on all Purveyors using Seattle water, perhaps not within the next decade or so, but within a period of 20 to 25 years. That cost of \$30 to \$40 million dollars or more will be charged to the Purveyors.

Sincerely,


Tim Daly, President
W.S.A.W.D.


Lew Trowbridge
Commissioner, Water District #42

TD/jc

cc: Jim Miller, Seattle Water Department
W.S.A.W.D. Board of Directors



KING COUNTY
WATER DISTRICT 42
16906 15th Avenue N.E.
P.O. Box 55118
Seattle, Washington 98155

July 27, 1979

Wilber G. Hallauer, Director
Department of Ecology
St. Martin's College
Olympia, WA 98504

RE: Instream Resources Protection Program for Snohomish River Basin

Dear Mr. Hallauer:

The totality of the information presented by the Department of Ecology to justify the Department's conclusions relative to the above referenced program is fragmented, not at all well documented and leads to conclusion not substantiated by factual information presented.

75 The methodology used to determine proposed instream flows does not appear to be proper and is based on inadequate information. It is an impossible task to attempt to cross reference the information. The documents beg more questions and supplies very little in the way of answers.

The economic impact of this Basin proposal when combined with the proposal for the Cedar Sammamish could, and most likely will, be significant -- a subject given no attention at all by the material presented.

All the proposals taken as a package represent a no-growth land use policy, a forced Regional Supplier, and leading to conclusion for some other political reason. It appears the Department by reaching conclusion necessary to support the Snohomish Mediated Agreement has ignored the people in favor of frogs and fishes.

In closing I would like to recommend the following:

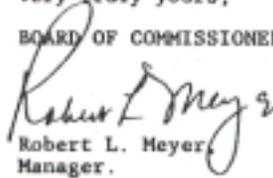
76 The instream flow for the Tolt should be left as is.

Mr. Wilber Hallauer
July 27, 1979
Page 2

77 A separate EIS should be done for the Tolt with an in-depth analysis of the economic consequences of any proposed action.

In-put from agencies outside of DOE who have experience and data should be sought out and included in a final EIS.

Thank you for your consideration.

Very truly yours,
BOARD OF COMMISSIONERS.

Robert L. Meyer,
Manager.

rk

Water District No. 20, King County
12606 FIRST AVENUE SOUTH
SEATTLE, WASHINGTON 98168

WILLIAM J. HOSKO, GENERAL MGR.
MARJORIE HATHAWAY, OFFICE MGR.

BOARD OF COMMISSIONERS:
JEAN HALL TIM DALY
JACK L. PARKER

Wilber G Hallauer, Director
Department of Ecology
St Martins College
Olympia, Wa 98504

Subject: Snohomish River Basin Instream Resources Protection Program Document

Dear Mr Hallauer,

I have reviewed the draft of the subject program document including the proposed administrative rules and supplemental EIS. Over the last several months a number of other related documents have also been reviewed. These include other publications by: the Department of Ecology, Corps of Engineers, City of Seattle, City of Bellevue, and several regional committees.

78

The material contained in the subject document adds to the confusion created by the above mentioned publications and the associated public hearings. All of these relate to and impact the source of M&I water for the region and the potential actions of the City of Seattle as the existing regional water supplier. Collectively these items contain a number of conflicts which relate to methods of analysis of the available data, the regional requirements, the available resources, the costs for water, and the future needs of the region. Closer agreement in these and other areas is needed between the affected entities. It is hoped that the above general comments will result in a positive approach by your department to resolution of the significant differences.

Water District No. 20, King County
12606 FIRST AVENUE SOUTH
SEATTLE, WASHINGTON 98168

WILLIAM J. HOSKO, GENERAL MGR.
MARJORIE HATHAWAY, OFFICE MGR.

BOARD OF COMMISSIONERS:
JEAN HALL TIM DALY
JACK L. PARKER

page 2

Snohomish River Basin

Several significant concerns arise from the subject document, these are:

- The document states "IN NO CASE WILL EXISTING WATER RIGHTS BE AFFECTED." It appears that adoption of the document will accomplish the opposite of
79 this statement. KCWD 20 has been purchasing water from the City of Seattle for over 50 years. I feel we are a part of the 1956 agreement on the instream flows on the Tolt River and see no reason for changing the existing minimum flow agreements.
- The cost of water to the residents of the region appear to be totally overlooked in
80 establishing requirements to greatest benefits of the users of this water. The need for drinking water at a reasonable cost appears to be overlooked. Documentation which
81 relates to the maximum net benefits to the residents is not included.
- The documentation to support the methods used to calculate the instream flows is not
82 clear. It appears that only certain instream uses were considered. Other instream and out-of-stream uses should have been included.
- 83 Proper distribution of the document and notification of potentially impacted users of water from the area also appears to have been overlooked.

It is hoped that the comments of this letter will aid in future similar actions to lead to closer teamwork and better communications with all agencies and affected areas.

Sincerely



Jack L Parker
Commissioner Water District #20

CITY OF
everett

CITY HALL
EVERETT, WASHINGTON
98201

July 18, 1979

Mr. John F. Spencer
Assistant Director
Office of Water Programs
Department of Ecology
Olympia, WA 98504

SUBJECT: Snohomish River Basin Instream Resources Protection Program, proposed administrative rules implementing the program and draft Environmental Impact Statement Supplement

Dear Mr. Spencer:

We have reviewed the subject documents and offer the following comments for your consideration:

General Comment

84 Of utmost concern to the City of Everett (and other water purveyors) is the ability to provide adequate potable water to our customers at a reasonable cost. Firm instream allocations without provision for deviation during low yield periods can certainly have an adverse impact upon this ability.

Specific Comments

- 85** 1. Emphasis is made in the summary and in other parts of the document that "in no case will existing water rights be affected". We would like clarification of the phrase, "existing water rights"; i.e., does this mean only certified rights or does it also include rights under permit with certification pending? And, does it also include those rights where an application was submitted but no permit issued as yet?
- 86** 2. Page 3 - paragraph 3. Statement is made that water is diverted into the Everett municipal supply at up to 180 cfs. This figure should be corrected to read 300 cfs.
- 87** 3. Figure 3 - opposite pg. 11. The location of the operating gaging station is shown incorrectly. The existing location is in accordance with an FPC Order and is south of the confluence of Chaplain Creek and the Sultan River.

Mr. John F. Spencer
Page 2
July 18, 1979

- 88** 4. Figure 4 - pages 16, 17, & 18. Controlling instream flow hydrographs are included for all control locations with the exception of No. 12.1381.50 (Sultan River). If one is to be established for the Sultan River, we would need sufficient time to review it with respect to Everett water rights and long term needs. The proposed hydro-electric plans of the Snohomish PUD could also have a maim impact upon instream requirements - depending upon the location of the control station.
5. Pages 3 & 4, Proposed Chapter 173-507. Although columns are provided for critical year flows, no numbers are established. If it is the intent to establish critical year flows for the Sultan River, how and when will this be done?
- 89** 6. Supplemental Environmental Impact Statement - Page 1. The summary statement acknowledges the adverse impact to potential M&I water supply development but also states that these impacts would be mitigated by providing critical year conditions. Since neither instream flow recommendations nor critical year flows are established for the Sultan River, we would like clarification as to how this proposal will affect the water supply for the Everett service area.
- 90** 7. Draft Supplemental EIS - Page 11 - Sources - Paragraph 1. The last sentence states the proposed Sultan Project II will operate under conditions imposed by F.E.R.C. regulations. Can we assume that if Stage II does not materialize, the control for the Sultan River will be the existing conditions imposed by F.P.C.

If you have any questions concerning our comments, please contact Marvin C. Haglund, Director of Systems Development, 259-8811.

Sincerely,



WILLIAM E. MOORE
Mayor



2320 California St., Everett, Washington 98201 258-8211
 Mailing Address: P.O. Box 1107, Everett, Washington 98206

July 27, 1979

Hearing Officer
 State of Washington
 Department of Ecology
 Olympia, WA 98504

Draft Supplemental EIS
 Snohomish River Basin Instream Resources
 Protection Program

The Snohomish County Public Utility District No. 1 staff has examined the referenced document and feels that the regulations and EIS are incomplete and would like to make the following comments.

General Comments

1. The addition of critical year instream flows is an excellent addition to the program and is a much more equitable means of apportioning flows between instream and other users during dry periods.
2. Leaving the Sultan Basin out of the regulations at this time pending resolution of the FERC licensing process now underway is supported.
- 91 3. The District strongly feels that there is an imbalance of competing interests in the decision-making process regarding the protection of instream resources. The production of hydroelectric energy can and does work in harmony with fisheries, wildlife and environmental aspects. Energy should be given equal consideration and representation along with that of the Departments of Fisheries and Game.

Hearing Officer
 Department of Ecology

- 2 -

July 27, 1979

Specific Comments

1. Paragraph 3, page 10 of Draft EIS

The following description of the proposed minimum flows in the Sultan River should be added:

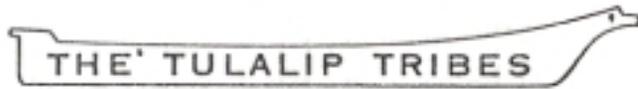
The following instream flows have been proposed in the FERC application for the Sultan River Project by the P.U.D. for fishery protection through consultation with the State Departments of Game and Fisheries. Immediately downstream of Culmback Dam (RH 16.5), 20 cfs will be maintained throughout the year. Between the Everett Diversion Dam (RM 9.7) and a fish water return pipeline above Horseshoe Bend, 30 cfs will be maintained as a minimum flow. As a result of the releases from the fish water return pipeline, the minimum flow at the gaging station below Chaplain Creek (12-138150) (RM 5.2) will vary during the year as follows:

	<u>Period</u>	<u>Flow</u>
92	January 1 – January 15	100 cfs
	January 15 – February 1	Increasing to 175 cfs
	February 1 – May 1	175 cfs
	May 1 – May 15	Decreasing to 100 cfs
	May 15 – September 1	100 cfs
	September 1 - September 15	Increasing to 175 cfs
	September 15 – November 1	175 cfs
	November 1 – November 15	Decreasing to 100 cfs
	November 15 – January 15	100 cfs

We wish to thank you for the opportunity to review and comment on this document.

Yours very truly,

 W. G. Gilbert, Jr.
 Manager



6700 TOTEM BEACH ROAD
MARYSVILLE, WASHINGTON 98270

July 27, 1979

Eugene Wallace
Division Supervisor
Washington State Dept. of Ecology
Olympia, Washington 98504

Dear Sir:

The Tulalip Tribes would like to offer the following comments on the draft Snohomish River Basin Instream Resources Protection Program.

93 We support the idea of protecting base flow in western Washington stream. However, at the July 19 public meeting in Monroe, Wa., it was stated that public groups were contacted and involved during the formulation of this draft statement. The Tulalip Tribes feel that they were blatantly omitted from this involvement. In light of the Tribes interests in the Snohomish system, it is hard to believe this was an accidental omission.

94 On page 19, paragraph 3, an automatic review is discussed after a "certain number of applications or threshold quantities of diverted water have been attained". What are these "certain numbers" or quantities? We are concerned with the adequacy of protection for small streams.

95 Page 23 lists the provisional instream flow regulations for Quilceda Creek, Mission Creek, and Tulalip Creek. All three of these streams lie at least in part on the Tulalip Reservation. As such, those portions lying on reservation are not subject to control by the State of Washington. We too are concerned though with the maintenance of flows in these streams and would be happy to discuss, with you, your proposals for possible tribal adoption.

96 Page 8 of appendix B, paragraph 1. We believe this statement to be misleading. This would only be true in a vertical sided channel. As the bank slope decreases the wetted perimeter would increase with increasing flow. The wetted perimeter is the standard used for estimating potential coho salmon production due to their rearing requirements. The possible impacts in this area need to be clarified.

Thank you for the opportunity to comment on this matter.

Sincerely,

THE TULALIP TRIBES

D. Somers, Biologist

Post Office Box 507
Duvall, Washington
July 28, 1979

Department of Ecology
Olympia, Washington

Attention: Hearing Officer

Dear Sir:

The Department of Ecology got into land use planning when it developed the permit system.

We are now requesting that you take the logical further step and protect the stream sources from the developers and those governmental agencies that are inclined to be compliant with developers.

To many small streams are being lost at their sources, thus cutting down on final flow.

All natural ground water sources and all natural surface water sources must be channeled into existing streams as a developer cuts into the land and those streams protected.

97

This "Instream Resources Protection Program" isn't worth the paper it is printed on, the time put in on it and the taxpayer dollars used in developing it unless you get into the area of land use planning in this aspect.

The department of Ecology is the logical body to lend guidance and develop guidelines. Do not abrogate your responsibility.

Most sincerely,



Vera Heavens

Concerned Citizens for Planned Growth

pacific northwest
RIVER BASINS COMMISSION



Mr. Rod Sakrison
Washington
Department of Ecology
PV-11
Olympia, Washington 98504

July 20, 1979

Dear Mr. Sakrison:

Snohomish River Basin Instream Resources Protection Program

This is in reply to your request to review the proposed administrative rules and supplemental EIS for the referenced program. These comments do not constitute Commission review of the program.

1. Unaddressed Impact/Problem with the Conditional Provision or Withdrawal Limitations

As I view and interpret the proposed program, additional, potentially serious water supply problems may be created through development of the program and assumed subsequent effective implementation. These problems will cause private and public hardships not clearly recognized or evaluated at this time. They should be addressed before they are, in effect, created and subsequently occur.

98

Permits issued after adoption of proposed instream flow regulations will be conditioned to the instream flow levels, limiting diversion to only periods when the flow in the stream meets or exceeds the prescribed levels. (p. 1-Suppl. EIS) The principal adverse impact will be a less firm water supply for out-of-stream uses. Indirectly, this may lead to increased demand for out-of-stream storage which may produce adverse environmental impacts. (p. 2-Program Final EIS) I agree with that assessment, and it is also the basis for my concern and a suggestion or proposal addressing the problems.

99

"Water diversions under water rights that are subject to flow restrictions will cease diverting when specified flow levels are reached." (p. 10 - Basin Program) First, what thought has been given to the implementing and enforcement process when the conditional provisions take affect? Second, permittees are going to be quite reluctant to

100

cease withdrawals because there may be no provision for alternative sources of supply. If that should be the case, the situation could be disastrous for them. While there are critical year mitigation conditions which can be applied by the Department to waive the permit conditions or limitations, this merely confuses program design, implementation and

101

impact, and avoids the ultimate problem of assuring effective allocation of water during a shortage emergency and making firm provisions for sufficient supplies to meet established needs during a low probability event. The program should not create a "less firm" water supply situation in order to protect instream values. Is that maximizing net benefits? Other than temporary relief through waiving or reducing instream low flow values, what strategies or options are contemplated?

Letter to Rod Sakrison
July 20, 1979
Page Two

Has any consideration been given to a "make-up" water policy? This policy requires as a condition of a water withdrawal permit that certain actions be taken to provide additional water compensating for the permittees withdrawal during low flow conditions if they do not wish to completely cease their diversion or withdrawal.

The actions, for example, may be in the form of cash payments to a revolving account being accrued to eventually build water storage projects as needed. Payment might be reimbursement for an existing water supply project to cover their share of the benefits derivable from the stored water (if it were needed) to compensate for the user's withdrawal which otherwise would not be permitted during low streamflow conditions established by program regulations. (This could be one way to partially pay for North Fork Snoqualmie Dam.) A make-up water program has been developed through administrative regulations by the Susquehanna River Basin Commission for just the kind of situation which will likely develop under certain low flow conditions and the proposed administrative rules.

2. Water Conservation Element Needed

Section 90.54.020 (6) states: "Federal, state, and local governments, individuals, corporations groups and other entities shall be encouraged to carry out practices of conservation as they relate to the use of waters of the state." I would change the word encouraged to required as a condition of permit issuance in future water resource administration. Also, emerging national water policy has conservation as a keystone. It is not clear what kind of carrot/stick arrangement for Federal funds there will be, but it is safe to assume that conservation will be a key element. Therefore, why not develop the concept in this new program?

3. Technical Issues under Irrigation

Discussion in the supplemental EIS assumes a certain amount of return flow (7,600 acre-ft) from irrigating activities (p. 9). I believe that sprinkler irrigation will be used rather than field or row flooding. Considering the energy cost for pumping water, such a return flow would be wastefully expensive. Other assumptions in irrigation impact analysis are also troublesome. It may be my lack of personal knowledge that is the problem. I have brought the irrigation section to the attention of local agricultural agency people. This should affirm or refute my concerns.

4. Enhanced Protection of Existing Water Rights and Allocations

The basic purpose of the program inherently increases the likelihood that "grandfathered" users will receive greater assurance that stream water supplies will be available to meet their needs and fulfill their water rights. This program benefit is not presented.

Letter to Rod Sakrison
July 20, 1979
Page Three

5. Incorporation of Information by Reference

I readily appreciate the many problems and advantages related to this strategy concerning the wealth of existing information on the Snohomish River basin. The Level B Study also shares the information management problem. It isn't necessary to repeat everything, but I'm uncomfortable with the feeling that this short-cut either overlooks or misses points essential to impact analysis. Under fisheries, a most important resource benefiting from this program, two sources aren't incorporated by reference which provide substantial and valuable supportive information. They are:

Williams R. Walter. et al. 1975. A catalog of Washington streams and salmon utilization: Puget Sound. v. 1. Washington Department of Fisheries.

and

Pacific Northwest River Basins Commission. 1970. Puget Sound and adjacent waters, comprehensive study of water and related land resources. App. XI - Fish and Wildlife.

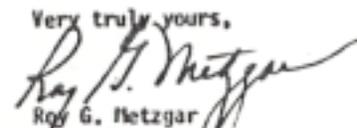
The Level B Study work cited is a summary and update of some of the information in the PS & AW report. Evidence of valuable supportive data not repeated or brought forward is provided by enclosed copies of tables 8-1 and 8-2. Review and reference to information such as this may provide an expeditious way to respond to public hearing comments, and strengthen program design.

6. Minor Editing

Two minor errors were noted.

- a) Appendix II should instead be Appendix I (bottom p. 1 - Suppl. EIS).
- b) North Fork Skykomish River should instead be Snoqualmie (p. 13 - Suppl. EIS).

In closing, I personally appreciate the coordinative language and recognition used in the program document concerning the Level 8 Study and the Snohomish Basin Resource Management Program.

Very truly yours,

Roy G. Metzgar
Study Program Manager
Snohomish River Basin
Level B Study

Enclosures

RGM:gp

cc: K. Kauffman
J. Johnson

July 18, 1979

Comments Concerning Snohomish River
Basin Instream Resources Protection
Program

These comments are germane to DOE's instream flow considerations for the Tolt River system and represent a concern for proposed M&I water withdrawals and their potential impact on the salmon and steelhead fishery of the Tolt River.

108 The Tolt River Steelheaders do not support any further water withdrawals from the Tolt River (either fork or main stem). If withdrawals must be authorized, it is recommended they be authorized only within the flow limits which maintain 100 percent of the spawnable area. Further, 1956 instream flow requirements on the Tolt should be abandoned in favor of DOE's proposed normal and critical flow requirements which respect and protect the fishery resource.

Two recommendations that are important for DOE to consider in the instream resource program as it relates specifically to the Tolt River are as follows:

- 109 1. Normal and critical flows should be established for each fork and the main stem of Tolt River. These flow regimes are necessary to insure the fish resources in each fork remain viable and healthy and that the main river continues to provide a quality habitat for anadromous species and an important streamway for the recreational fisherman. Establishing these instream flows is even more critical in view of Seattle's position on the South Fork and their proposal for the North Fork.
- 110 2. The proviso under paragraph (2) of WAC 173-507-020 which gives the Director of DOE the authority to reduce instream flows below critical year flows when he has made a "declaration of overriding considering of public interest" is very bothersome. Such a proviso without specific guidelines or expanded definition allows for much too much administrative discretion and would be consistently subject to special interest lobbying and political whim. A more complete definition containing specific criteria establishing the conditions under which a declaration could be made is a much needed safeguard.

These remarks are representative of the Tolt River Steelheaders. Thanks for the opportunity to discuss this program.



Dave Clark
Tolt River Steelheaders
230 Mt. Rainier Pl. N.W
Issaquah, WA 98027

APPENDIX D

Responses to Comments

Responses are keyed by numbers which appear on the comment letters in Appendix C.

Responses to Department of Fisheries:

- 1 - The potentially high value of Chum salmon production, based on large escapements to the system is recognized.
- 2 - We agree that implementing an automatic review process for stream reaches without specific instream flow figures is important. The department has initiated further study of this process with regional personnel, discussing potential management options. We will be developing standard operating procedures to implement this element of the program in the next few months. It should be noted that the proposed rules cover all streams and tributaries at the date of adoption.
- 3 – The likelihood of potential salmon production being reached is only partly determined by the future availability of instream flow. Instream flow is one important habitat parameter, but there are others, including substrate, water quality, and stream accessibility (for fish). Stream habitat is only one element affecting production. Others include harvest/management and escapement. The proposed instream flow levels will provide a level of flow that can be reasonably expected to occur on a relatively frequent basis. Future diversions will not be allowed to violate that level. In most years water availability will be considerably higher than the proposed level, allowing substantially greater instream resource utilization. The proposed levels were selected after analysis by fish and game personnel and judgment of their adequacy to protect the fishery.
- 4 – The text of the EIS has been corrected to describe the spawning and rearing phases of the anadromous, fish in the Snohomish River Basin. The information provided is also displayed in Figure 1 of the EIS. The significance of summer and early fall flows for Coho rearing is acknowledged.

Responses to Department of Fisheries (Hearings Testimony):

- 5 - This is the stated purpose of the Western Washington Instream Resources Protection Program. (See Final EIS and Program Overview, DOE, June 1979).
- 6 - Flows determined from the Department of Fisheries - U.S. Geological Survey method have been consulted in each of the instream flows proposed. In addition, all flows or levels recommended were judged for adequacy by comparison to the Fisheries - USGS flows (optimum). Fisheries review of actual spawning populations occurring on specific dates and flow regimes has been a valuable contribution to this program.
- 7 - See Response 2.
- 8 - Noted. The department agrees as to the importance to the region of additional M&I water supply and generally supports additional environmentally sound water supply development where it is feasible to protect and preserve instream uses as provided by state law.

Responses to Department of Game:

- 9 – The proposed rules are a basinwide program to comprehensively set instream flow requirements as required by state law (Chapter 90.54 and 90.22 RCW). Prior to the implementation of this program, many streams have been closed to further consumptive appropriation (250 to date) and others have been restricted with low flow provisions (250 to date) under existing statutes. Practical problems in administering the instream flow provision on future water rights will be no more demanding than under current practices. The department does intend to come back to these basin instream resources protection programs once they are all completed. At that time further studies will be conducted to determine the magnitude of existing use and the quantity of water available for further appropriation, if any. Further stream closures may be made as a result of these studies.
- 10 – Flows set in these proposed rules will be minimums reached only relatively infrequently. On uncontrolled streams high flow levels will be available to accomplish high-flow streambed flushing and channel modifications. The primary concern in this regard is where significant storage is provided, or large diversions are made, thus altering the natural peak flows that determine channel characteristics, and scour and flush substrate materials. Where a project is proposed, this must be considered and mitigated on a case-by-case basis.
- 11 – We do not agree. Benefits will accrue progressively as demands upon the water resource increase. The instream flows set at this time will protect the fishery, not only as it now exists, but by adequately watering available habitat, it will help facilitate restoration of historic salmon runs. Potential production can hopefully be reached through conscientious fisheries management and habitat preservation and restoration.
- 12 – Proposed diversions would be handled the same as current water right applications. A permit would be issued to develop the water use with specific conditions applied to it, including the proposed instream flows (if adopted). Where small tributaries are involved, and instream flow control locations are considerably downstream from the proposed diversion, separate flow values can be determined at that location. As currently proposed, this would become an automatic practice once a certain threshold quantity of diverted water is reached. We believe this will safeguard small streams from over appropriation, even though downstream instream flow figures may continue to be met. See also Response 7.
- 13 - The corrections have been made to the program document. We will note again that all streams and tributaries, including small ones, in the Snohomish River Basin are covered by this action.
- 14 - The relationship of the instream flow protection program to potential developments on the streams is recognized. Our proposed rules anticipate as much as possible the proposed development on several

major streams in the Snohomish River Basin. In these instances, we do not at this time have definite information concerning either of the proposed developments. Changes to the proposed rules may be accomplished at any future date and will certainly be considered within the required five-year review period.

- 15 – We agree that conservation should be an important element in the plans for future development of water use. The circumstances wherein a critical year would be declared would obviously demonstrate widespread regional deprivation and would only then consider trading off instream requirements for human needs. Lower than critical flows would be an extremely rare event. Evaluation of any proposal to depart from the normal year requirements will include consideration of existing or planned emergency water conservation measures outlined by the project operator. State and federal fishery agencies will be consulted prior to granting permission to depart from the normal year curve. These elements will be included in the standard operating procedure that is being developed to implement this program.
- 16 – We welcome the recommendations for closure of the named streams. Unfortunately, they cannot be included in the proposed rules to be adopted on September 5, 1979, since due process, including public hearing prior to adoption, has not included these closures. We have included the streams in Table 1, page 7, Current Administrative Status of Streams and Lakes, as recommended for closure. Our regional personnel will be alerted to these potential closures, and will act in accordance with the review procedures of Chapter 75.20 RCW and notification to the departments of Game and Fisheries will be made upon receipt of water right applications using any of the streams as a source. We propose to include this as an element of the standard operating procedure being developed to implement this program. Formal closure can be accomplished at the reopening of the Snohomish rules within five years.
- 17 – We disagree. Summer flows to sustain instream rearing potential is an objective of the flows set. The flows that are being set plus the small stream monitoring provision will provide excellent instream resources protection.
- 18 – We must look to the agencies with specific expertise in an environmental area for specific or extraordinary information. Part of the purpose of comments to a draft EIS is to provide such additional pertinent information as you suggest is appropriate.
- 19 - We do not anticipate that setting minimum flows will necessarily lead to appropriation of the better than average flows. See responses 9 and 10.
- 20 - Noted.
- 21 - The criteria for steelhead have been added to Table 3.

22 - Column 2 of Table 4 was incorrectly identified as the period of spawning, when in fact it merely indicates the period used for analytical purposes. The dates covered in the column will apply to one particular flow regime only. Periods outside the boundaries will be protected with different flows or levels and will accomplish a different degree of instream resource protection.

Responses to Department of Game (Environmental Affairs):

23 – The instream flow levels recommended by the Department of Fisheries have been discussed in study team sessions regarding the setting of instream flows. Often their recommended flows were above the 50 percent exceedence curve and would only be available during greater than average runoff conditions. Their flows were used as the standard for judging the adequacy of the other flow recommendations.

24 – The comments are noted and additions to the text have been included.

25 – The flows will help to protect habitat. Overall management of fisheries, including harvest management, escapement, and other habitat protection functions of Game and Fisheries are in large measure responsible for production levels. We believe the proposed flows provide an adequate level of protection, very near the stated optimum for salmon spawning, and that with improved fishery management, production levels can be increased above the present depressed levels.

26 – The streams compared for optimum flow were those offered by the Game and Fisheries representatives for purposes of our analysis. Adequacy of any of the other flows could be judged by applying their methodology to proposed flow and known parameters of stream channel morphology. See also Response 2 regarding streams not specifically provided with control locations.

27 – See response to Comment 2. In some cases the recommendations of Fisheries do not represent flows that can only be expected to occur infrequently.

28 – We do not agree that flows proposed will result in serious impacts in any of the drainage basin areas. We do not believe the study team members from Fisheries and Game would sanction these flows if they were indeed harmful.

Responses to Washington State Parks and Recreation Commission:

29 – The criteria for judging the value of each stream is admittedly subjective on some points. The methodologies utilized in this program are based on sound scientific facts, however. The U.S. Geological Survey methods utilize actual toe-to-bank measurements, though conclusions to be drawn from that method can be subject to considerable uncertainty. Our method, which is based on historic streamflow is distinctively scientific in its origin. Because it uses statistical hydrologic methods, we feel it protects instream

resources with an expected level of flow. For further information concerning our methodology, see the final EIS and Program Overview for the Western Washington Instream Resources Protection Program (DOE, June 1979).

Responses to U.S. Environmental Protection Agency:

30 - Investigation of how the proposed flows might help achieve water quality standards in the state is continuing. We expect a mutually supportive relationship between the programs inasmuch as the instream flows will protect the availability of waters, particularly during the critical, low flow period of late summer and early fall. Long-term water quality conditions appear to concur with our proposed flows. Chronic temperature violations appear to need further consideration. Nonpoint pollution abatement coupled with flow protection should improve the water quality perspective in the future.

31 - See Response 2.

Responses to U.S. Department of Commerce (NOAA, NMFS):

32 - We acknowledge that the careful monitoring and enforcement of the proposed instream flows will require additional diligence on our part. We have discussed procedural requirements with our regional personnel. Standard operating procedures will be developed with the enforcement arm of the department. Generally speaking, this will not constitute a new regulatory effort for our department, in that we have existing instream flow regulations governing future diversions in other river basins in the state. This present effort will result in a comprehensive program for all basins in Western Washington.

33 – We agree with this point; however, we do not anticipate requiring public hearings in granting relief from normal year flows where the critical year flows are provided during drought conditions. In some cases, a rapid response will be necessary due to a deteriorating water supply outlook. This is especially true in the fall if expected precipitation does not occur.

34 – Instream purposes should be a stated objective of any North Fork Snoqualmie project and required as an operating aspect of the facility. In view of state water rights, instream needs (excluding hydroelectric power generation) are not required to have water rights per se. In other western states, water rights for instream resources protection are required under the appropriations doctrine. In Washington State, we operate under statutory authority to protect instream resource values (Chapter 90.54 and, 90.22 RCW) by establishing instream flows as administrative rules.

Responses to City of Seattle:

135 - Although the Department of Ecology was not a party to the 1956 agreement, it recognizes certain rights and conditions as established at that time. The condition for operation of the

South Fork Tolt project, as prescribed in the 1956 agreement, are a provision in the water right permit (#4253) for the project. There is no intention here to affect the operation of the South Fork Tolt Reservoir. The permit was issued to develop the water right using the South Fork Tolt as the source and does not refer to any other reach or tributary of the Tolt River system as a source. As such, the proposed development of the North Fork Tolt, for water supply and hydroelectric development, will require additional water right permits and will be subject to the instream flows adopted in this program.

The adequacy of the flows provided in the main stem of the Tolt River from the contributing forks has been questioned by the fish and game agencies in study team meetings for the Snohomish River program (See Comment 8). Analysis of the resource protection capability of the 1956 agreement flows showed a less than desirable level of protection. Alternative flows are proposed that are closer to optimum levels of habitat preservation, although higher levels are preferred by the Department of Fisheries.

The selected flows will not affect the existing permit for the South Fork Tolt project, but will condition future rights on the North Fork. If adopted as proposed, North Fork development would be required to cease diversion at a higher flow level than the South Fork, which could continue to operate until the 1956 levels are reached. At that point, the South Fork would be required to pass adequate inflow to maintain the prescribable (1956) instream flow. The project operator may, at its option, coordinate diversion and releases to maintain the proposed flows.

- 36 – Our methodology is intended as a "first cut" analysis of instream resource needs, based on the historical streamflow. It provides a slightly different perspective than the other habitat based methodologies also assessed in the program.

Study team negotiations resulted in the proposed flow sets. During the process, Ecology presented their preferred flows and Fisheries and Game theirs. Each state agency justifies their flows based on their methods of analysis. Ecology is, in the most part, concerned with the frequency with which flows occur. The departments of Fisheries and Game base their judgment of flow suitability on the degree to which spawnable area and rearing area is provided by the flows. Since Ecology's frequency based levels can easily be converted to the percent of spawnable area, the different flows can be readily compared. The initial flows proposed for the Snohomish and the interim negotiated flows are available, but we do not intend to publish all the details of the study team meetings.

The authorizing statutes for the Western Washington Instream Resources Protection Program is RCW 90.54.020(3)(a) (Water Resources Act of 1971). It clearly states that "perennial rivers and streams of the state shall be obtained with base flows necessary for the

preservation of wildlife, fish, scenic, aesthetic and other environmental values and navigational values. These objectives are distinguished from the beneficial uses of water as identified in RCW 90.54.020(1), which refers to hydropower, industrial, commercial, agricultural, and other uses. The allocation of waters among these potential uses and users shall be based generally on the securing of net benefits for the people of the state. The allocative process of water rights appropriations is not considered to have the primary status of the preservation of values related to the setting of base flows.

- 37 – The purposes of SEPA are broad in scope and require full accounting of project purposes, actions, and impacts. For a programmatic action such as the Snohomish River Instream Resources Protection Program, SEPA does not specifically indicate the required analysis. Ecology has published similar programmatic EIS's for basin programs, the overall WWIRPP program and the Columbia River Instream Resources Protection Program. The Snohomish River EIS is generally modeled after these efforts.
- 38 – The Water Resources Act of 1971 provides fundamentals to guide the department in its water resources management and planning functions. Among these are declaration of beneficial uses (RCW 90.54.020(1)), the provision regarding allocation of water resources based generally on securing maximum net benefits to the people of the state (RCW 90.54.020(2)), and that in the protection of the natural environment, rivers and streams of the state shall be retained with base flows necessary to provide for preservation of instream uses (RCW 90.54.020(3)(a)).

This act when considered in combination with Chapter 90.22 RCW (minimum water flows and levels) provides a very strong priority for the establishment of instream flows in the state's rivers and streams. Therefore, it has been the department's view that in the implementation of the acts, it is necessary to provide a base level of protection for instream resources from further water allocation activities, and that setting these levels does not require the test of maximum benefits. The result is, in effect, reservation of water for these uses (uses that cannot readily be quantified in terms of dollars) and a defacto priority for these uses. The maximum net benefits test applies to appropriation of water to uses above these basic protection levels.

The study team selection was predicated upon the values mandated for protection of instream flows. The Western Washington Instream Resources Protection Program has coordinated most actions with the impacted users groups. Of these groups, all significant concerns that have been brought forward have been considered in designing the program. We cite the availability of critical year flow provisions on streams with major water resource developments. We feel this represents a high degree of sensitivity within our program.

- 39 – This is a misinterpretation of the instream resources protection program. The proposed rules will apply only to future water rights and proposed projects in the application phase.' Since the City of Seattle's existing water right on the South Fork Tolt (in permit) dates from a prior time, it will be unaffected by the instream flows proposed for the Tolt River. See also Response 35.

- 40 - Project operation information concerning the future development of the North Fork Tolt River is appreciated.
- 41 - The 1956 agreement referred to in the comments is not presented in the text of the program in that it is not pertinent to the present action. The conditions stated in the agreement are part of the existing right of the City of Seattle for the South Fork project and will be unaffected by the program. Earlier provisions are restrictions and are recognized as proper for prior rights preceding the adoption of new provisions. Only future rights will be conditioned to the proposed flows. See also response Nos. 35 and 39.

The flows set for the Tolt River under the 1956 agreement were, in fact, presented in the DEIS, as an alternative flow regime. They were rejected on the basis of inadequate preservation of instream resource values.

- 42 – Note response to comments of City of Seattle in final EIS for Western Washington Instream Resources Protection Program (No. 33, p. VI-7, 8). See also previous Response 36.
- 43 – The "two-curve" approach was adopted for streams which will be controlled by major development and is intended to recognize the need for assurance that projects will be able to operate at or near maximum efficient levels. Water supply facilities are required to accommodate low water year conditions and rate their assured yield at times of least water availability. A low flow expected only once in 50 years is the required design standard for municipal water supply.

The preservation of instream resources values cannot be maintained at the extremely low levels of flow corresponding to "critical years." The damage to returning migratory and resident fish, as assessed by the study team methodologies, is tolerable only for limited periods, as evaluated and approved by the director of this department. The long-term need to provide adequate spawning area and other habitat parameters in rivers and streams should only be compromised on a short-term, periodic basis, when pervasive, regional, severe drought conditions prevail.

- 44 – The stated occurrence interval, 1 in 50 year low flow, is a general concept adhered to by the program. This will apply only to the portion of the year corresponding to low flows. The department foresees the need to be flexible in its application of the critical year scheme and feels it unadvisable to fix a specific number on that flow provision.

The expected violation of the normal year flows could be about once every 10 years. When that occurs, the parties will appeal to the director who will judge the required reduction of limits required. We do not feel the normal year curve should be specified, therefore, do not publish a specific flow occurrence figure in the regulation.

45 - See Response 36.

46 - See Response 39. In view of Seattle's impression of how they would operate developments on both the North and South Fork (Comment and Response No. 40), this would not be the case. Should Seattle desire to continue diverting from the North Fork Tolt, it could, if it so desired, release water from its South Fork Reservoir to meet the instream flow requirements. This would seem unlikely and would require further feasibility analysis on the part of the project sponsors.

47 – Neither Fisheries, Game nor this department can specify the exact beneficial effect of the instream flow program. We feel that fish preservation requires a stable commitment of water that can be expected from now into the future. This amount is roughly equal to an "optimum" level as indicated by the Department of Fisheries - U.S. Geological Survey methodology. By "optimum," the method refers to the differential efficiency of adding another increment of instream flow over the proposed level. An efficient, or optimum, state is reached when a given unit of spawnable area is provided for a unit provision of streamflow. This is not a maximum level, which can be a much larger figure. The critical year flow nowhere nearly approaches adequate habitat protection on a long-term basis.

Fisheries management facilitated by the instream flows protection program, can proceed with the development of natural fish production. This is viewed as the sustaining management program for a comprehensive state fisheries program. As such, the instream flows program is a cornerstone of our state's resource management activities.

48 - See Response 38. The setting of base flows is a clearly stated charge to the department. Other uses of water are not prohibited, but are subject to such flows.

49 - As presented as internal comments to the study team, and publically as testimony, the Department of Fisheries believes that the current level of natural fish production in the Snohomish River Basin, particularly the Tolt River, is in a depressed state. The potential level under the current situation is much larger. That increment is not "enhancement," but merely regains lost productivity. Enhancement, particularly as it would require exceptional allocations of water beyond base flow, would have to be considered under a net benefits criteria. Further it would be necessary to judge whether the possibility for enhancement exists, or whether other competing uses on a stream might prevail.

- 50 – This program is the initial phase of a complete basin program; namely, to set instream flows. Additional steps would be required to actually address the allocation of available waters. Existing and pending water rights would have to be assessed. The total water resource of the basin would be compared to the competing beneficial uses that the water could be put into, and an allocation would be made. Only then would the net benefits criteria come into play. See also Response 38.
- 51 – The City of Seattle should provide whatever data it has available on the proposed North Fork Tolt projects, as required under SEPA. We have assessed the impacts of our program on these developments in a general manner only, since no specific project information has been made available. Communications with City Light officials have been helpful, but the extreme length of their deliberation has precluded more extensive use of project plans. It is true that this instream flows program may indirectly affect the proposed North Fork Tolt hydroelectric project. The Federal Energy Regulatory Commission has the ultimate responsibility for prescribing instream flows for power projects. We customarily intervene in such proceedings and will certainly represent our flows as proper. Instream flow figures were provided to the City of Seattle at the earliest possible date (March 1979). The decision to base project formulations on the South Fork Tolt water right agreement is unwise in light of the potential impact of our program.
- 52 – No attempt was made to preclude any potentially interested parties. We have done our best to keep Seattle informed. We provided early drafts of information and tentative flow numbers to Seattle for comments prior to public release of draft documents and proposed administrative rules. Seattle has certainly not been excluded.
- 53 – The preparation of the DEIS is an outgrowth of the decision-making process that determined the significant aspects of the Snohomish River Instream Resources Protection Program. We disagree that the significant environmental impacts of the program were not considered. We have clearly addressed direct impacts of the flows, particularly as they impact instream uses. Additionally, we have discussed regional or indirect impacts of the program.

We submit that the DEIS does conform not only to the purposes of SEPA, but to the specific requirements of WAC 197-10-440(1) through (14). The DEIS accurately displays the impacts, both beneficial and adverse, and discloses potential impacts, within reason. We find no merit in the comment that the use of many diverse documents was lacking in specific reference.

- 54 – The DEIS conforms with WAC 197-10-440(12), alternatives to the proposal, on two levels. Firstly, we have considered other approaches to achieve the results. This is particularly germane to a programmatic EIS. Secondly, we have proposed a range of flows at each station. The DEIS did not show these flows in hydrograph form for any station, but material of this nature for the Tolt River is now incorporated in the final EIS. The analysis of

proposed flows for the Tolt River remains as it was presented in the draft. The proposed department flows achieve the protection and preservation of instream values as required by state law and apparently do so without foreclosing other beneficial uses of water. The 1956 agreement flows, if extended to cover North Fork Tolt developments, would have a fundamental destructive effect on the fisheries of the Tolt River system, according to all available information at this time.

- 55 – The projects addressed in the Seattle Water Department's Comprehensive Plan are referred to in the program document (See p. 5, Program Document) and were accommodated in our technical analysis of instream flows. We present "two level" flow sets for the streams with proposed major diversions, like the Tolt River.

We do not oppose Seattle's water supply development plans. We do want to see the proposed instream flows observed as a basic level of instream resource protection and included in Seattle's plans and studies.

- 56 – The department does not feel bound to provide an analysis of the relationship between instream resource values protected in this program and potential adversely impacted uses of the waters. The Water Resources Act of 1971 distinguishes between instream values to be preserved and allocations to beneficial uses. Should this program grant rights to potential uses, it would be bound by both the 1971 Act and SEPA to provide information concerning the relative trade-offs between beneficial and adverse impacts. We are not willing to compare "fish dollars" and other nonmonetary benefits to the value of water in municipal-industrial use, or other uses. This would be contrary to the intent of state law. We have been sensitive to out-of-stream users of water in detailing these proposed administrative rules, by providing mitigative measures and sufficient remaining waters to be allocated in further phases of the program.

We have provided the data and information necessary to assess the potential impacts of the instream flows upon water supply. As time allowed, we were able to receive comment from the City of Seattle concerning the probable yield from the North Fork Tolt, as subject to the proposed flows. Yields were estimated as being between the figures 38 mgd and 52 mgd. Using the 1956 flows, the yield could be as high as 70 mgd (COMPLAN, Seattle Water Department, p. 6.49). We have no way of interpreting the dollar values of this reduction to potential utility rate payers without prior knowledge of the feasibility of the North Fork Tolt plans.

The Water Supply Study of the Seattle metropolitan region must be relied upon for analysis of potential yields and costs of water supply (Joint Cedar-Snohomish Water Supply Committee, June 1979). According to the latest information available, if the South Fork Tolt is operated according to the 1956 minimum instream flow requirement and the North Fork is operated according to this proposed instream flows, the firm yield of the North Fork Tolt would be 52 mgd. As utilized in a regional analysis of the next increment of water supply, it indicates that the Tolt River will continue to provide the lowest cost (single parameter) water supply for the region. The estimated cost of unit water supply would probably be between \$90,000 and \$95,000 per mgd.

The cost of water supplied from the Tolt system will be competitive with any other supply source in the region, especially when the potential value of hydroelectric power generation is included. The instream flows should not preclude development of this source. Which source will be selected next is a matter of maximum net benefits and will be addressed by the department in the near future in a separate study. For further thoughts on the need for several potential water supply sources and impacts on regional growth, see comments by John P. Spencer, Director of Water Programs, DOE, as presented at the North Bend hearing of the Snohomish River Instream Resources Protection Program (See Appendix E).

- 57 – The new information reported here, that places dollar values on water supplies, was incorporated by reference in the DEIS. The authority in the metropolitan Seattle water picture is the Joint Cedar/Snohomish Water Supply Committee. The findings of our program have been inputs to their study since March 1979.
- 58 – See final EIS for Western Washington Instream Resources Protection Program (DOE, June 1979). The North Fork Tolt River is a well-known fish and game habitat, utilized in all seasons.
- 59 – The Department of Fisheries has kept historical data on actual field surveys during the fall spawning period. The flows that correspond to the 1959 base year of the study of potential salmon escapement in the State of Washington (Washington Department of Fisheries, Management and Research Division, April 1974) closely agree with the department's proposed instream flows.

The amount of instream water needed to support the existing fishery on the Tolt River is not a concern of the present program. Due to its greatly reduced productivity, the charge of the Department of Fisheries is to restore the Tolt run. This will be accomplished by the provision of minimum flows. The Department of Fisheries was on record in 1956 as requesting a minimum flow regime of between 200 and 250 cfs, at a location downstream from the confluence of Stossel Creek. The eventual agreement did not provide that degree of protection. The proposed instream flows will accommodate fisheries needs during normal years, with exception to the late summer flows. These figures pertain to a control station upstream from the convergence of Stossel Creek (U.S. Geological Survey gage 1485). Both normal and critical years share 190 cfs violable level during mid-August to mid-September. The flow regime raises from mid-September till early or mid-October, depending on the availability of water in a given year.

The actual size and composition of the current fishery on the Tolt River is not accurately known. Among the sources of information on current fisheries we assessed, was a City of Seattle publication, Existing Bodies of Water on the Cedar and Tolt River Watersheds and their Potential for Fisheries Production, (Seattle Water Department, July 28, 1978). Unfortunately, the publication failed to discuss either the existing fishery, potential, or habitat condition on the main stem Tolt River. Nor did the Seattle Water Department's Comprehensive Plan discuss existing fisheries on the Tolt River. We feel, in absence of other information, that we must rely on the Department of Fisheries data and conclusions.

- 60 – See Table 4, (DEIS, p. 7), Instream Flow Impacts to Spawnable Area, for indication of habitat capabilities of alternative flows on the Tolt River.
- 61 – See Response 59.
- 62 – See responses 56 and 57.
- 63 - See Response 54.
- 64 – See responses 56 and 57.
- 65 – Indications from the study team participants were that a tolerable level of protection of instream values should approach about 90 percent of the optimum spawnable area. These calculations were provided by the Department of Fisheries. Subsequent testimony given to this effect at the public hearings confirms the desirability of these flows (see comments by Department of Fisheries at Monroe hearing in Appendix E).
- 66 – See final EIS for the Western Washington Instream Resources Protection Program (DOE, June 1979) for a discussion of our methodology, rating system, and conversion curve. Considerable back-up information is available on file at the department. In addition, a technical brochure is available from DOE with a general description of available data (Snohomish River Basin Technical Document, Office Report No. 70, June 1979). See also responses 36 and 42.
- 67 – WE cannot agree with this.
- 68 – No.
- 69 – No.
- 70 – No.

Responses to Washington State Association of Water Districts:

- 71 – We cannot agree with your assertion. The association was provided a copy of the draft at the earliest possible date (initial mailing June 28, 1979). In addition to the final EIS, an overview for the overall Western Washington Program had been supplied prior to that. In that publication is a schedule for the remainder of the two-year program.
- 72 – The existing flows are not adequate for preservation of the fisheries resource. This is the finding of our program and it is substantiated by current and past correspondence with the Departments of Fisheries and Game. We think it significant that in 1956, Fisheries requested substantially higher flows during the negotiation. We intend to implement flows for future diversions on the Tolt River. See also responses 8 and 35.

- 73 – See the final EIS and program overview for Western Washington Instream Resources Protection Program for a thorough discussion of our methodology. See responses 36, 42, and 66.
- 74 – This information had not previously been brought forward. The Water Supply Study of the Seattle Metropolitan Region (Joint Cedar/Snohomish Water Supply Committee, June 1979) is viewed as the conclusive investigation of water supply sources and costs. Our instream flows (draft) were supplied to that group and were incorporated in their analysis. That input reduced potential yields and modified the cost picture for unit water supplies. Nowhere in the Joint Committee's analysis does the cost to the purveyors appear. See also Response 57.

Response to King County Water District 42:

- 75 – The future water supply sources for Metropolitan Seattle is an important decision in which all local and state agencies have participated. The region-wide nature of the issue has prompted an unusually comprehensive analysis of the supply and demand issues. Much of the analysis is being completed by the Seattle District of the Corps of Engineers. The impact of our program upon the water supply study has not been overlooked, nor has it produced limitations that will amount to a defacto, no-growth, land use policy. Sufficient water supplies are available in the long-run future of the region. See Response 56.
- 76 – See responses 8, 35, and 72, 77 - See Response 69.

Responses to King County Water District No. 20:

- 78 – We acknowledge the difficulties in assembling a coherent view of the numerous reports that are circulating concerning water supply for Metropolitan Seattle. We suggest that each document be assessed for information about the proposed plans and projects of the individual agencies. For the regional bottom-line analysis, the Water Supply Study of the Seattle Metropolitan Region is the best summary source.
- 79 – The adoption of these proposed rules will have no effect on Seattle's existing water right and operation for the South Fork Tolt River. See responses 8, 35, 39, and 40.
- 80 – The analysis of cost of water supply was included in the DEIS. We discussed the effect of the instream flows upon yields for the proposed North Fork Tolt project. Unfortunately, we have only preliminary proposals from the city concerning project formulation and cannot assess the final water supply costs to customers. That information may be available from the Seattle Water Department in their final Comprehensive Plan. The cost of water supply has been reported in the Water Supply Study in terms of mgd yields. That information is included in this final EIS.
- 81 – See responses 38, 50, and 56.
- 82 – A thorough discussion of our methodology is included in our final EIS and program document for the Western Washington Instream Resources Protection Program. The

statutory basis for our action is Chapter 901.54 RCW (Water Resources Act of 1971) and Chapter 90.22 RCW (Minimum Water Flows and Levels).

83 – We do not agree. Water districts and water purveyors have been sent timely information and notice.

Responses to the City of Everett:

84 – Agree. For this reason, a two-stage flow regime is proposed where water supply and hydro projects are proposed.

85 – Applications for water rights will be subject to the instream flows. Permits and certificate of water rights will not be subject to the proposed administrative rules.

86 – Noted.

87 – Noted.

88 – Under circumstances where a power license application is being made to FERC, we will defer judgment on minimum flows until a decision has been made by the Federal Energy Regulatory Commission. State departments of Fisheries, Game and Ecology are normally parties to those deliberations. Generally, FERC has the final authority in establishing instream flow requirements for hydropower projects. We normally do intervene in FERC proceedings and fully expect FERC to consider our instream flow recommendations.

89 – See responses 84 and 88.

90 – This would be covered under existing water rights and any instream flow restrictions on those rights and will be unaffected by our program. Future projects without power generation would be subject to the instream flows adopted at the time their permit is issued.

Responses to Snohomish County PUD No. 1:

91 – Implementation of the Water Resources Act of 1971 commands the department to "provide for preservation of wildlife, fish, scenic, aesthetic and other environmental values, and navigational values" (RCW 90.54.020(3)(a)). These characteristics are given priority over other potential beneficial uses of water.

92 – The instream flows proposed in the FERC application are noted.

Responses to the Tulalip Tribes:

93 – We acknowledge coordination problems in the early phases of our program. The role of the individual tribes was not well defined as we initiated the first basin specific programs. We did believe the Indian tribes to be one of our primary "clients" in the Instream Resource Protection Program. Though this may have guided our efforts to protect instream resources, it does appear now that we passed the important opportunity to involve the Tulalip tribes and came to decisions concerning specific flows or levels of protection without direct tribal

involvement. We have discussed the role of the tribes with tribal fisheries interests and have laid out procedures to involve tribal representatives early in these basin programs.

94 – The automatic review process is currently being discussed with our regional managers and will be incorporated in new standard operating procedures. We will notify the tribe of our intentions in this matter.

95 – We will follow up on this proposal.

96 – Noted.

Responses to Vera Heavens:

97 - The Department of Ecology is not authorized to be involved in local land use planning with the exception of programs of statewide significance. The proposed action does not impact land use plans. Development proposals that may involve future water diversions would be subject to our instream flows.

Responses to Roy G. Metzgar:

98 – It is not our intent or purpose to prevent future water supply projects. It is not unreasonable to put limits on the capacity of a project to divert water from a stream. The impact of the Snohomish River Basin Instream Resources Protection Program upon future municipal and industrial water supply projects is documented in the EIS section of this document. See also responses 56 and 57.

99 – We are working with our regional managers to address the administration of the instream flows, particularly the conditional provision for critical year operation. Conservation will be an important prerequisite in consideration of proposals for relief from the normal year flow requirements.

100 An option for mitigating water scarcity is a fundamental state goal of encouraging conservation of water use, as required in the Water Resources Act of 1971 (RCW 90.54.020(6)).

101 We are bound by state law to provide instream flow for the preservation of instream values. Potential uses of water must compete for available supplies under the test of maximum net benefits to the public. See responses 38 and 50.

102 The proposal is a good idea, but would require fundamental changes in Washington water law.

103 Existing statutes provide for sanctions against the waste of water. See also responses 99 and 100.

104 Return flow occurs even with sprinkler irrigation, although commonly less is returned on a percentage basis than with gravity distribution systems. We have not heard from any of the

local agricultural interests, although we have tried to involve numerous of them in the program.

105 Acknowledged. Earlier water rights have always had defacto priority and higher level of security.

106 Both of these sources were referenced in the final EIS for the Western Washington Instream Resources Protection (DOE, June 1979), and utilized in our program preparation.

107 Noted.

Responses to Dave Clark:

108 Future diversions from the Tolt River will be conditioned with the proposed instream flows. It is not within the authority of this program to modify any existing water rights.

109 It is the department's position that having a single instream flow set for the Tolt River will accomplish control of the proposed diversion on the North Fork. This will also allow some flexibility for the City of Seattle in operating the South Fork reservoir. At the time that the city requests a permit to construct a North Fork project, instream flows could be placed on the North Fork that would be correlated to the downstream location on the main stem.

110 We are currently at work on detailing the procedures necessary to implement the normal and critical year curves. Regional personnel and headquarters staff would evaluate for the director, the necessity for allowing waiver of either of the curves. It is expected the normal year curve may be waived on an average of once every 10 years, while the critical year should only be attained once every 50 years. These probabilities, of course, could occur in any given year, and we are conscious of the urgent need to establish criteria by which to judge the severity of a dry-year situation.

APPENDIX E

PUBLIC HEARINGS TESTIMONY

The following comments constitute the official record of the public hearings held on the Snohomish River Basin Instream Resources Protection Program. Testimony was taken on July 18, 1979 at North Bend, and July 19, 1979 at Monroe.

Comments were received from the following:

North Bend - July 18

1. Jim Miller - Seattle Water Department
2. G. W. Bishop - Seattle City Lighting Department

Monroe - July 19

1. Marvin Hagland - City of Everett
2. Ray C. Johnson - Department of Fisheries
3. Bob Heirman - Snohomish County Sportsmens Association
4. Charles A. Garlinger Monroe



STATE OF
WASHINGTON

Dixy Lee Ray
Governor

DEPARTMENT OF ECOLOGY
Olympia, Washington 98504 206/753-2800
Mail Stop PV-11

August 16, 1979

Memo to: Files
From: Rod Sakrison
Subject: Snohomish River IRPP Public Hearings of
July 18 and 19, 1979

Public hearings were held on the proposed rules for instream flow protection in the towns of North Bend (King County) and Monroe (Snohomish County). See attached notices and agenda.

Snohomish River Hearings

North Bend - July 18

The official hearing was preceded by presentations of the program's intent by John Spencer, Assistant Director for Water Programs, and Kris Kauffman, Section Head for Water Policy Development. A short discussion period followed their opening remarks, which touched upon the effects of the proposed rules upon elements of the Mediated Plan for flood control in the Snohomish basin. It was also suggested that the program include criteria concerned with the development of lowhead hydroelectric power generation.

Jim Miller - Seattle Water Department -- presented outline of joint City of Seattle response.

111 He questioned the ability to accurately determine proper levels of fishery protection when data on existing fishery is inadequate. Further, he questions the true value of increasing flows beyond existing levels, suggesting that the 1956 agreement on the Tolt River is adequate. His remarks
112 centered on four items: 1) that an improper methodology was used to establish instream flows,
113 particularly on the Tolt; 2) the levels of protection exceed the dictates of the 1971 Water
114 Resources Act; 3) the EIS is inadequate in that it does not appear to assess program costs and
115 benefits, and 4) no justification is given to change minimum flow levels already established for the Tolt River.

116 In summation, Mr. Miller recommended not changing the 1956 Tolt flows, pursuing a joint city-state study of the Tolt, prepare a separate EIS for the Tolt, and declare a moratorium on the Tolt until a solution is reached among parties.

G. W. Bishop - Seattle City Lighting Department -- supports Mr. Miller's position that care should be taken in establishing instream flows. Seattle City Light has intentions to establish hydroelectric power generation on the South Fork and North Fork Tolt River. The hydro development would be built in conjunction the Water Department's South Fork project and hopefully coordinated and developed with their North Fork needs.

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Page Two

117 On the South Fork they would be working with the existing dam and regulating basin. Mr.
Bishop did not know if they would be influencing flows in the South Fork appreciably from what
they are now. There might be some water spilled now that would be reduced. To utilize the
118 energy potential of the North Fork, they would be constructing a new dam on the upper end of a
lie narrow gorge. The powerhouse would be perhaps a couple miles downstream. The basic use
of water would still be for M & I consumptive use.

119 Mr. Bishop felt that if instream flows are set too high, it could affect the economics of
integrating the M&I water and the power development. If M&I water supply, plus instream use,
take too much of the stream, there will be less power produced. This might eliminate the
feasibility of such a joint operation. They are not sure yet if it is feasible because of the
considerable length of time required to develop these proposals. Mr. Bishop offered to keep the
department informed as their plans are formulated.

Discussion from the floor continued with a question concerning where human needs (i.e.,
energy) would take precedence over instream requirements. John Spencer pointed out that the
proposed laws can be amended when projects are developed. In that case, special flow levels
will be determined, including critical year" levels. The instream flow do not preclude
development of facilities on the North Fork Tolt or North Fork Snoqualmie River, but they do
alter the economics of those proposals. Under existing projections it appears both projects will
be needed.

Kris Kauffman went on to demonstrate the procedure that DOE went through to determine flows
for the Tolt River. Based on statements by Fisheries and Game, the present flows are
inadequate, and both agencies recommended new levels be established. These were compared
with the existing flows and those generated from the DOE methodology. Study team
negotiations resulted in the proposed flows. The information generally available to consider
these flows as cross-sectional data and a function of fisheries production, which is the spawnable
area.

Jim Miller pointed out that the percentage of spawnable area is not to be confused with the
percentage of fish production. Crucial information on the actual number of fish in the river and
how much area is needed is lacking. In the Cedar River it has been determined that there is a
capacity for 350,000 fish, and in the Tolt there is probably an order of magnitude less, though the
flows proposed are relatively higher.

Monroe - July 19

The official hearing was opened after introductory comments by the Basin Coordinating
Committee. Comments from the public concerned the quality of stream environments in the
Snohomish Basin, particularly in the lower Skykomish Basin. The representative from Everett
questioned which forms of existing rights would remain unaffected. It was stated that
application for water rights would not be acted upon prior to formal adoption of the

administrative rules. Personnel from Seattle Water Department requested confirmation of an introductory statement that the "critical year" was in fact a 1 in 50-year flow event, and if the 2 percent occurrence curve used to develop the regulation. This is roughly the case, though it is not specified in the methodology.

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Marvin Hagland - City of Everett -- notes that no instream, flows were published on the Sultan River, presumably due to the pending hearings before FERC, for the PUD-City joint applications for stage two of the Sultan Basin Project. The location of the gaging station should be correctly shown as below the confluence of Chaplin Creek and the Sultan River.

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Ray C. Johnson-- Department of Fisheries -- concerned with maintaining the production of naturally produced salmon. Base flow levels must be established in order to maintain present levels of salmon production. Fisheries has worked with the departments of Game and Ecology to establish the proposed flows for the Snohomish River Basin. His department has made extensive instream flow measurements in the basin. The department, in conjunction with the U.S. Geological Survey, has: jointly developed a methodology for determining flows that would provide protection for the fishery resources. In addition, they have reviewed actual salmon spawning populations occurring on specific dates and flow regimes. This review included spawner distribution and density in relation to streamflow in the heaviest utilized areas. The proposed flows satisfy the required protection of salmon resources.

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Mr. Johnson encourages DOE to extend the control locations to include more tributary streams, which are significant spawning areas for Coho salmon. The instream flow levels proposed for the Tolt River are needed for protection of the fisheries resources. Fisheries recognizes the need of the City of Seattle for additional M & I water supply and believes that the proposed flows offer the needed resource protection while allowing for some additional M & I water diversion. Fisheries concurs with the proposed instream flows and urges their adoption.

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Bob Heirman - Snohomish County Sportsmens Association -- The draft EIS reference to magnitude of summer steelhead runs is incorrect. The main summer steelhead runs were up the North Fork Skykomish and Tolt rivers and on some other streams such as West Fork Woods Creek, now believed to be barren of some kinds of fish. Mr. Hierman pointed out the inability of any organization from stopping the numerous hydraulic violations that are caused by development of real estate and gravel extraction industries.

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Charles A. Garlinger - Monroe -- Would like to see Woods Creek rehabilitated and logging activities improved around the stream environment.

A question from the audience was directed at streams where special facilities are being developed. In cases such as the sultan, were a private utility is developing a project, flow levels will be set by FERC proceedings with the state resource management agencies as intervenors. In circumstances such as the North Fork Snoqualmie Dam, there would be no FERC hearing since it is a federal project (Corps of Engineers).

APPENDIX F

RESPONSES TO PUBLIC HEARING TESTIMONY

Responses are keyed by numbers which appear on the record of the public hearings.

APPENDIX F

RESPONSES TO PUBLIC HEARINGS TESTIMONY

Responses to Jim Miller, Seattle Water Department:

111 - The provision of instream flows is predicated upon the preservation of instream resources, including fish, wildlife, and other environmental values. Fisheries protection is only one of the objectives of the instream resources protection program, but is admittedly most sensitive to improper instream flows. See Response 47.

It is agreed that considerably more data concerning existing fisheries and habitat requirements would be extremely helpful in setting instream flows for that purpose. If the authorities and duties of the department did not demand a comprehensive, statewide coverage of the water program, the depth of analysis could approach the degree of sophistication indicated in the City of Seattle comments. Considering the demands of the Western Washington program, it is logical for the department to seek a level of security in flows related to each stream. Under the circumstances, the department must, in part, rely on other local state and federal agencies for some instream resource information specific to their jurisdiction or expertise.

The existing minimum flows on the Tolt River are not considered adequate and will not be utilized for conditioning any future water rights on the Tolt. See responses 8, 35, and 59.

112 - See responses 36, 42, and 66.

113 - One of the objectives of the Western Washington Instream Resources Protection Program is the preservation of salmon runs. The department is required to retain adequate instream flows in all streams of the state. Fisheries management, water quality maintenance, and other instream values will be supported by the provision of instream flows. Flows must be adequate to protect the purposes of the Water Resources Act of 1971, which seeks preservation of these values. The requirements may cause minimum flows to be reassessed, as is the case in the Cedar River (Final EIS and program document, DOE, August 1979).

The Department of Fisheries has noted that the flow levels that produced good fish runs during certain years are considered adequate for preservation. Their testimony cites those flows as being comparable to the flows to be adopted by these administrative rules. We believe the proposed flows do not exceed the dictates of Chapter 90.54 RCW (Water Resources Act of 1971), but meet the requirements of preservation of instream resources. See responses 47 and 59.

114 - See responses 53, 54, 56, and 57.

115 - See responses 8, 35, and 59.

116 - These requests have been rejected. See responses 67, 68, 69, and 70.

Responses to G. W. Bishop, Seattle City Lighting Department:

117 - We would urge the Lighting Department to make available further information concerning the proposed design of hydroelectric power operation facilities on the Tolt River. We find it difficult to assess the potential impacts of instream flows on hydropower operations in connection with the existing South Fork Tolt project or proposed joint project for the North Fork Tolt River without a more complete notion of project design.

118 - The department has requested information about the design and operation of the proposed Tolt River facilities (letter to Superintendent of Seattle Lighting Department, August 22, 1979). We expect to receive a reconnaissance level investigation report, but not in time for consideration in the final EIS.

119 - Hydroelectric power generation and municipal water supply present different problems for preserving instream resource values. Hydroelectric power dam operations would need to be coordinated with the taking of municipal water supply to insure that serious impacts do not occur instream. Generally, water supply may cause a gradual, but irretrievable loss of streamflow, while power generation might create serious fluctuations of streamflow. The effect of both could damage fish, wildlife, and other instream resources. Instream flow requirements as proposed would help prevent such damage.

Marvin Hagland - City of Everett:

120 - This is correct. Flows for the Sultan River will be adopted following completion of the FERC proceedings. See Response 88.

121 - Noted.

Roy C. Johnson, Department of Fisheries:

122 - The information referred to is available on file at department headquarters.

123 - The instream flows program study team is currently working on standard operating procedures to implement the automatic review of small streams and tributaries.

124 - Agreed.

125 - Any balancing of out-of-stream uses and required instream resource preservation is accomplished only after an adequate provision for instream flow has been made. This is the primary concern of the Western Washington Instream Resources Protection Program. We believe that in the Snohomish River Basin and, in particular, the Tolt and North Fork Snoqualmie rivers, sufficient municipal water supplies will be available and instream resources will be protected.

126 - Noted.

Bob Heirman, Snohomish County Sportsmens Association:

127 - Noted.

128 - The department recognizes a gap between regulatory authority and enforcement capabilities. The department's commitment is to improve its own performance and to work closely with other state and local agencies in this regard.

Charles A. Garlinger, Monroe:

129- The status and condition of urbanizing streams, like Woods Creek, are a concern of the department. We will be coordinating our efforts in the Western Washington Instream Resources Protection Program with the state water pollution abatement program and local water quality and surface water management programs. We hope to integrate our program of maintaining instream flows with urban streams clean-up programs and the state litter program. We foresee great benefits in restoring fish runs in many urban streams. This will involve considerable effort from private citizens, working in local stream rehabilitation programs.